



RECOIL

PREPARATION  
SURVIVAL  
MOBILITY  
DEFENSE  
MEDICAL  
GEAR

# Black Out

What If A Hacker  
Disables The Grid?

- + **Traps, Snares & Baits**
- 7 Keys To A Survivor Mentality**
- SERE Class**—Lessons Learned
- Q&A: **EMP Expert** William R. Forstchen
- RVs:** Are They Bug-Out Worthy?

HYDRATION  
PACKS



BUG-OUT  
BRACELET



RECHARGEABLE  
FLASHLIGHTS



VACUUM  
SEALERS



THE HUSTLE  
NETWORK

TEN

OFFGRIDWEB.COM  
ISSUE 10



# MORE BITE!

## INTRODUCING THE DD5<sup>TM</sup>



[ 7.62 x 51mm ]

When we set out to create a .308/7.62mm rifle fit to wear the Daniel Defense name, we cleared the drawing board and created an entirely new evolution of the AR-10 platform. Packed full of innovative features that enhance comfort, durability and performance while still possessing the legendary handling and quality of our DDM4 carbines.

**COLD HAMMER FORGED BARREL**

**INNOVATIVE 4-BOLT CONNECTION SYSTEM**

**OPTIMIZED RECEIVER DESIGN**

**OPTIMIZED BOLT CARRIER GROUP DESIGN**

**AMBIDEXTROUS OPERATION**

**CONFIGURABLE MODULAR CHARGING HANDLE**

**GEISSELE<sup>®</sup> SSA 2-STAGE TRIGGER**

**DANIEL DEFENSE OVERMOLDED FURNITURE**





Visit [DanielDefense.com](http://DanielDefense.com) for more information, and see the new DD5™ at your local Daniel Defense dealer.

**DANIEL  
DEFENSE®**  
»LIGHTER. STRONGER. BETTER...®

## DEPARTMENTS

- 6** **On the Cover**  
All the Great Gear Found on the Cover
- 8** **Editor's Letter**  
Change With Change
- 12** **Gear Up**  
The Latest and Greatest Products
- 16** **HighLights**  
Rechargeable Flashlights
- 20** **What If?**  
A Hacker Brings Down the Grid
- 102** **Health**  
Case the Joint: Where Is Your Joint Pain Coming From?
- 108** **Hands On**  
Reviewing Supersse Straps' 28-in-1 BOB Pro
- 114** **411**  
The Cost of Hack Attacks

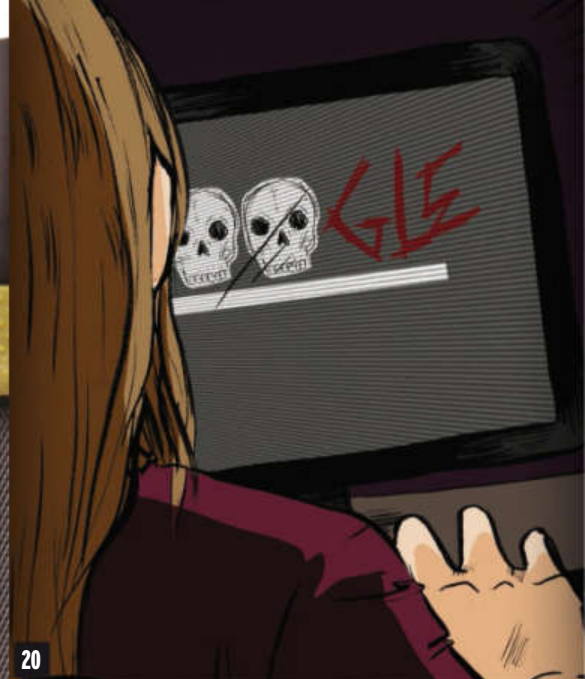
## FEATURES

- 30** **It's a Trap!**  
Bait, Snare, and Box Your Way to Survival With These Trapping Methods
- 36** **The Future's Stone Age**  
Q&A With Author, Historian, and EMP Expert William R. Forstchen
- 40** **Firewood Fundamentals**  
How to Baton Wood With a Knife
- 46** **Survive, Evade, Resist, and Escape**  
Lessons Learned From Our Industry-Exclusive Invite to 88 Tactical's Intense (But Fun) SERE Class



16

30



20



40



52



46







60 68



74



80 86



96



## 52 **Home on Wheels**

Can Conventional RVs Work in a Bug-Out Scenario?

## 60 **Get to the Choppa!**

Machetes Truly Are the Original Survival Multitools

## 68 **Cyber Crimes**

You May Be One Click Away From a Costly Invasion. Become a Human Firewall With These Tips.

## 74 **Sharpen Your Knowledge**

Do You Know Your Blade Grinds and Profiles? You Should — They Can Make or Break Your Survival Knife

## 80 **7 Keys to Survivor Mindset**

A Combat Psychologist Analyzes What it Takes to Survive and Thrive When SHTF

## 86 **Hydration Pack Buyer's Guide**

Water, Water Everywhere and Not a Drop to Drink...Unless You're Wearing it

## 96 **Seal It**

The Many Uses of Vacuum Sealers

## Product Disclaimer

Prices and details for products and services featured in this issue are set by the manufacturers, retailers, and agencies, and are subject to change without notice.



Throughout this issue you will see certain images are labeled as being 100% Actual Size. This designation is for the print edition of this issue. Because of the various screen sizes on different tablets and computers, we cannot always provide actual life size images in digital versions. We apologize if this causes any confusion and thank you for your understanding.



Cover Photos: Jorge Nuñez;  
hansendesigns, Judith Dzierzawa,  
Pawel\_Kisiolek/istockphoto.com



# ON THE COVER

## 1 Hat

### MAKE & MODEL

Vertx  
Khaki Hat

### MSRP

\$13

### URL

[www.wearvertx.com](http://www.wearvertx.com)

## 2 Eye Protection

### MAKE & MODEL

Wiley X  
WX Saint

### MSRP

\$95

### URL

[www.wileyx.com](http://www.wileyx.com)

## 3 Jacket

### MAKE & MODEL

Beyond Clothing  
Alpha Jacket Alt 1

### MSRP

\$338

### URL

[www.beyondclothing.com](http://www.beyondclothing.com)

## 4 Pants

### MAKE & MODEL

Black Diamond  
Castleton Pants

### MSRP

\$89

### URL

[www.blackdiamondequipment.com](http://www.blackdiamondequipment.com)





## 5 Knife

**MAKE & MODEL**  
DPx Gear  
HIT Cutter Knife

**MSRP**  
\$188

**URL**  
www.dpxgear.com

## 6 Headlamp

**MAKE & MODEL**  
LED Lenser  
H7.2

**MSRP**  
\$60

**URL**  
www.ledlenser.com

## 7 Machete

**MAKE & MODEL**  
Outdoor Edge  
Brush Demon

**MSRP**  
\$70

**URL**  
www.outdooredge.com

## 8 Flashlight

**MAKE & MODEL**  
5.11 Tactical  
Flexio Penlight

**MSRP**  
\$43

**URL**  
www.511tactical.com

## 9 Footwear

**MAKE & MODEL**  
Merrell  
All Out Charge

**MSRP**  
\$120

**URL**  
www.merrell.com

## 10 Backpack

**MAKE & MODEL**  
Oakley  
Bathroom Sink

**MSRP**  
\$150

**URL**  
www.oakley.com

# OFF THE COVER

## 11 Shirt

**MAKE & MODEL**  
Vertx  
OPS Base UL Shirt

**MSRP**  
\$24

**URL**  
www.wearvertx.com

## 12 Socks

**MAKE & MODEL**  
Wigwam Mills Inc.  
Switchback

**MSRP**  
\$19

**URL**  
www.wigwam.com



# Change with Change

By Patrick Vuong

Let's address the elephant in the room: The nameplate on the cover is indeed different. The addition of "Recoil" to our title has been done both to distinguish ourselves in an industry rife with terms like "off grid" and "off the grid," as well as to build synergy with our sister publication, RECOIL, the premier gun lifestyle brand. But rest assured that our style, editorial coverage, and balance between humor and practical know-how will remain very much the same...well, sort of — more on this later.

In this, our 10th edition, I'm proud to present another issue packed with realistic survival applications, in-depth analysis of gear and gadgets, and expertise from eminent subject-matter experts.

Case in point: Long-time contributor and survival authority Tim MacWelch explains how — should society collapse — we'll be left to subsist on only what we find in the concrete jungles and the surrounding wilderness. Therefore, he shares on page 30 effective ways to catch small game and other animals using snares and traps.

Next, I'm excited to introduce former U.S. Marine sergeant Nathan Murr to our readers. When we received an industry-exclusive invite to attend a SERE (survival, evasion, resistance, and escape) class taught by the elite trainers at 88 Tactical, I immediately thought of Murr for the assignment. A frequent contributor to RECOIL — there's that synergy thing popping up again — Murr is a writer, inventor, former Scout Sniper team leader, and all-around badass. Who better to not only survive the SERE class, but provide a keen distillation of the most important concepts taught? Murr has done just that, and more, with his top five lessons learned on page 46.

Regular readers might recognize Dr. Neal H. Olshan's byline on page 80. He wrote the "Bug Out By Air" feature in Issue 8 and lends his expertise once again in "7 Keys to Survivor Mindset," a primer on how to develop the right psychological fortitude to thrive in any crisis.

In this issue, you can also get your Danny Trejo on by reading the feature on machete applications by CQB expert Michael Janich, learn how to defend against cyber criminals when you're on the grid, understand how blade grinds and profiles can affect your survival knife, and study

the best way to make firewood using a knife and wooden baton. As always, we have our trademark gear reviews and columns — from rechargeable flashlights in *High-Lights* and a high-priced survival bracelet in *Hands On* to buyer's guides on vacuum sealers and hydration-compatible backpacks.

A quick glance at the newsstand shows that some industry rivals are taking note of how we're doing things by copying our amazing art team's visual style, as well as our story angles. We might not be the oldest survival magazine, but we've certainly had an influence on the market in the past two years. And we hope to continue to do so by changing with the times. Whether it's our nameplate modification or the need to evolve to stay ahead of competitors mimicking our editorial approach, we have to continually change. It's an apt metaphor for preppers, too. As Bruce Lee said, "To change with change is the changeless state." In other words, if you resist change, you perish. But if you adapt, you persevere.

We hope you like how we're changing with change — and if not, let us know. Go to [www.facebook.com/OFFGRIDmag](http://www.facebook.com/OFFGRIDmag) to drop us a message or email us at [offgrid@enthusiastnetwork.com](mailto:offgrid@enthusiastnetwork.com). It's the only way we can learn, improve, and remain "changeless."

Thanks for reading!





# ARE YOU READY?



You never know when an outdoor adventure with the family will quickly turn into a true survival scenario. So, be ready for the unpredictable, and gear up for what lies ahead. When the unthinkable happens, you'll need equipment you can rely on to take care of those closest to you. From survival bags and tents, our popular first-aid and knife rollup kits, and fire starters, flashlights and outdoor tools, 12 Survivors™ equips you for any situation you encounter. We Are One. We Are SURVIVORS.

Discover your survival  
archetype by visiting  
[12Survivors.com](http://12Survivors.com) today!



CULTIVATOR



DEFENDER



EXPLORER



HUNTER



INVENTOR



JESTER



LEADER



MEDIC



NATURALIST



PHILOSOPHER



TEACHER



TRADER

We Are One. We Are SURVIVORS.

817-225-0310 | [WWW.12SURVIVORS.COM](http://WWW.12SURVIVORS.COM)





# mavrik™ S.08 Kit

## Modular EDC Sling Pack



### Includes:

Single Pistol  
Mag Pouch  
82-535AL

Mesh Window  
Pouch 4"x5"  
82-503AL

Molded Touch-  
Fastener Holster  
82-535AL

Dedicated  
compartment  
for concealed carry

Available Colors: Black, Black & Tornado,  
Coyote, and Coyote & Dark Earth



View the full line: [mavrik.rrog.com](http://mavrik.rrog.com)

1.800.342.4654

### Editorial.

Editor/ Patrick Vuong  
Managing Editor/ John Schwartz  
Feature Editor/ Rob Curtis  
Contributing Editor/ Steven Kuo  
Photography Studio Manager/ Jorge Nuñez

Contributors/ Martin Anders, Jim Cobb, Ryne Gioviano,  
Michael Grey, Michael Janich, Erik Lund, Tim MacWelch,  
Nathan Murr, Patrick McCarthy, Neal H. Olshan,  
Sarah Watanabe-Rocco, Mike Searson, John Teator

### Art Direction & Design.

Creative Director/ Alan Albanian  
Group Art Director/ Ti Tong  
Art Director/ Gene Coe  
Associate Art Director/ Katia Sverdlava

### Manufacturing & Production Operations.

VP, Manufacturing & Ad Operations/ Greg Parnell  
Senior Director, Ad Operations/ Pauline Atwood  
Archivist/ Thomas Voehringer

### Submissions.

[offgrid@enthusiastnetwork.com](mailto:offgrid@enthusiastnetwork.com)

### Subscriber Customer Services.

Domestic/Canadian: 888.681.7064  
Foreign: 386.246.0439  
[offgrid@emailcustomerservice.com](mailto:offgrid@emailcustomerservice.com)

This magazine is purchased by the buyer with the understanding that the information presented is from various sources from which there can be no warranty or responsibility by TEN: The Enthusiast Network, LLC, or the publisher as to legality, completeness and accuracy.

Any submissions or contributions from readers shall be subject to and governed by TEN: The Enthusiast Network's User Content Submission Terms and Conditions, which are posted at <http://www.enthusiastnetwork.com/submissions/>

BACK ISSUES To order back issues, visit <https://www.circsource.com/store/storeBackIssues.html>

#### EDITORIAL CONTRIBUTIONS

Editorial contributions are welcomed, but editors recommend that contributors query first. Contribution must be accompanied by return postage and we assume no responsibility for loss or damage thereto. Manuscripts must be typewritten on white paper, and all photographs must be accompanied by captions. Photo model releases required on all persons in photos. Offgrid reserves the right to use material at its discretion, and we reserve the right to edit material to meet our requirements. Upon publication, payment will be made at our current rate, and that said payment will cover author's and contributor's rights of the contribution. Contributor's act of mailing contribution shall constitute an express warranty that the material is original and no infringement on the rights of others. Mail contributions to: Offgrid Magazine, 1821 East Dyer Rd., Ste. #150, Santa Ana, CA 92705.

#### ADVERTISING INFORMATION

Please call Offgrid Advertising Department, (949) 705-3100. Related publications: 4-Wheel & Off-Road, Four Wheeler, Jp, Truckin, Diesel Power, 8-Lug HD Truck, Dirt Sports & Off-Road, Hot Rod, Car Craft, Muscle Mustangs & Fast Fords, Mustang Monthly, Vette, Chevy High Performance, Lowrider, Classic Trucks, Super Street, European Car, Motor Trend, Truck Trend, Automobile, Sound & Vision, Stereophile and other specialty magazines.

Printed in the USA



Copyright © 2015 by TEN: The Enthusiast Network  
Magazines, LLC.  
All Rights Reserved.



THE  
ENTHUSIAST  
NETWORK™



### Advertising.

General Manager/ Mark Han  
Associate General Manager/ Danny Chang  
Sr. Manager, New Product Development/ Andy Cheng  
Advertising Operations Coordinator/ Teri Hancock

### National Sales Offices.

New York Office/ 212.915.4000  
261 Madison Avenue, New York, NY 10016  
Los Angeles Office/ 310.531.9900  
831 S. Douglas Street, El Segundo, CA 90245  
Irvine Office/ 949.705.3100  
1821 East Dyer Rd., Ste. #150, Santa Ana, CA 92705  
Detroit Office/ 248.594.5999  
4327 Delemere Court, Royal Oak, MI 48073  
Chicago Office/ 310.531.9896  
Tampa Office/ 813.675.3479

To advertise on this magazine's website, or any of TEN: The Enthusiast Network's other enthusiast sites, please contact us at [offgrid\\_advertising@enthusiastnetwork.com](mailto:offgrid_advertising@enthusiastnetwork.com).


### TEN: The Enthusiast Network, LLC.

Chairman/ Peter Englehart  
Chief Executive Officer/ Scott P. Dickey  
EVP, Chief Financial Officer/ Bill Sutman  
President, Automotive/ Scott Bailey  
EVP, Chief Creative Officer/ Alan Albanian  
EVP, Sports & Entertainment/ Norb Garrett  
EVP, Chief Content Officer/ Angus MacKenzie  
EVP, Operations/ Kevin Mullan  
SVP, Enterprises/ Tyler Schulze  
EVP, Sales & Marketing/ Eric Schwab  
SVP, Digital Operations/ Dan Bednar  
SVP, Sales Operations/ Matt Boice  
SVP, Financial Planning/ Mike Cummings  
SVP, Automotive Digital/ Geoff DeFrance  
VP, Editorial Operations/ Amy Diamond  
SVP, Content Strategy, Automotive/ David Freiburger  
SVP, Digital, Sports & Entertainment/ Greg Morrow  
VP, Digital Monetization/ Elisabeth Murray  
SVP, Marketing/ Ryan Payne  
EVP, Mind Over Eye/ Bill Wadsworth

### Consumer Marketing, Enthusiast Media Subscription Company, INC.

SVP, Circulation/ Tom Slater  
VP, Retention & Operations Fulfillment/ Donald T. Robinson III





# ROCK-SOLID RETENTION OR LIGHTNING DEPLOYMENT, DEPENDING ON YOUR DISPOSITION TOWARD AMERICA.



## SERPA® LEVEL 2 TACTICAL HOLSTER

- FEATURES OUR EXTREMELY FAST, YET ULTRA-SECURE AUTO LOCK™ RETENTION SYSTEM.
- EASILY CONFIGURES TO ANY MISSION WITH MULTIPLE PLATFORMS.
- U.S. MILITARY ISSUE.

In 1990, a Navy SEAL was navigating a minefield when his pack failed. As his gear tumbled to the ground, he vowed if he made it out alive he would make gear the right way. Today, this obsession with quality applies to everything we do. We are constantly researching, refining and perfecting every detail to provide gear that will not let you down. Because we are not just making stuff. We are honoring a vow.



MADE IN THE USA. SERVING WITH HONOR AND DISTINCTION WORLDWIDE.

© 2015

 **BLACKHAWK!**  
HONOR. AS A WAY OF LIFE.

BLACKHAWK.com



# GEARUP

## 1 MAKE & MODE Hults Bruk Axes Tornea

**WEIGHT**  
2.88 pounds

**MSRP**  
\$99

**URL**  
[www.hultsbruk1697.se](http://www.hultsbruk1697.se)

**+** **NOTES**  
Chainsaws are great — except when there's no gas or electricity to run them. Enter the medium-sized Tornea axe. Its hand-forged Swedish steel head and 26-inch American hickory handle can help you fell small trees, chop wood to size, and serve as an impromptu self-defense weapon. Hults Brook has operated in Sweden since 1697 — yes, for more than 300 years! — but 2015 marks the first time its axes are available stateside.

## 2 MAKE & MODEL Exotac tinderZip

**MSRP**  
\$7

**URL**  
[www.exotac.com](http://www.exotac.com)

**+** **NOTES**  
Out in the wild there's a thin line between a good time and Steve-broke-his-ankle-and-is-too-heavy-to-carry-out-of-the-woods-tonight kinda time. That line is sometimes a warm life-giving fire. The innovative tinderZip hides a few inches of flammable filament inside the nylon sheath of a zipper pull. Pull off the toggle or just cut the sheath to expose the red Fire Cord inner, fray it out a bit, and it's ready to turn a spark into a fire, keeping you and big Steve from freezing to death.

## 3 MAKE & MODEL Catalyst Catalyst Case for iPhone 6

**WEIGHT**  
1.55 ounces

**MSRP**  
\$70

**URL**  
[www.catalystlifestyle.com](http://www.catalystlifestyle.com)

**+** **NOTES**  
If you haven't banished your iPhone after reading the articles in this issue, you'll need to protect it — at least physically. And the Catalyst case will do that for you. It's waterproof to 16.4 feet and protects from drops up to 6.6 feet per Mil-spec standard. It preserves all functionality, including the TouchID fingerprint sensor, and has ports for audio and the Lightning connector. Available in several colors, it's made of polycarbonate with a soft-touch rubber bumper and silicone seals.

## 4 MAKE & MODEL RinseKit Pressurized Portable Shower

**CAPACITY**  
2 gallons

**MSRP**  
\$90

**URL**  
[www.rinsekit.com](http://www.rinsekit.com)

**+** **NOTES**  
The world is a dirty place, and hygiene is the single most important defense against an early demise — aside from antibiotics and the ability to outrun an angry mob. The RinseKit is a portable shower that runs on the water pressure imparted as the system is filled using any modestly pressurized water source. There's no pumping and no batteries. Just fill it up from a garden hose and the system is charged up for use at the beach, camp, or trailhead. It includes a 6-foot hose and a spray nozzle.





## 5 MAKE & MODEL Oxx Coffeeboxx



### WEIGHT

12 pounds (empty)



### MSRP

\$250



### URL

[www.oxx.com](http://www.oxx.com)



### NOTES

About the size of a large lunch cooler, the Coffeeboxx was designed with construction workers in mind, but could also serve campers, hunters, and boaters. It features a crushproof body, a retractable power cord, six external stainless steel tie-downs, and a rubberized handle. This tough-as-nails brewer accepts single K-Cup pods, pours out hot coffee in less than 90 seconds, and can dispense steaming water from a separate line. We're not suggesting you attach this to your go-bag — but if you preloaded the Coffeeboxx and some K-Cups in your bug-out RV, a little caffeine could go a long way in a post-SHTF world. Just saying.

## 6 MAKE & MODEL Aquamira Frontier Max Filtration System



### DIMENSIONS

120 gallons per cartridge



### MSRP

\$50



### URL

[www.aquamira.com](http://www.aquamira.com)



### NOTES

The Frontier Max water filtration system is compact, inexpensive, and modular. It can be set up to run with a straw, bottle, hydration bladder, or part of a gravity-fed system using the included quick-release adapters. Aquamira says the RED Line filter removes protozoan cysts, bacteria, and viruses to safe levels without the need for back-flushing or disinfecting chemicals. And the Frontier Max is barely larger than a couple bottles of iodine pills, but is much faster and easier to use.

## 7 MAKE & MODEL Pocket Shot Pocket Shot



### DIMENSIONS

2.3 by 1.3 inches (closed)



### MSRP

\$25



### URL

[www.thepocketshot.com](http://www.thepocketshot.com)



### NOTES

We love good ol' American ingenuity. The Pocket Shot is a perfect example of rethinking the slingshot. It looks like a strange toy, but it's serious business. Drop a projectile into the pouch, hold the circular handle, pull back on the pouch, and release — it'll fire steel ball bearings up to 275 feet per second. The blue pro-pouches will blast shot out at 300 to 350 fps. Plus, it's small and light enough to fit in, well, your pocket.

## 8 MAKE & MODEL UCO Titan Stormproof Matches



### LENGTH

4.13 inches



### MSRP

\$10



### URL

[www.ucogear.com](http://www.ucogear.com)



### NOTES

It's OK if you have match envy — this is a big-ass match. It's the Magnum of survival matches, producing 25 seconds of roaring flame that'll give you a fighting chance at igniting the most stubborn tinder. The Titan can even be relit after being submerged. One box contains 25 of the 4-inch matches and extra strikers, enough for 10 minutes of fire.

5



6



7



8





# GEARUP

## 9 MAKE & MODE Duckworth Vapor Tee



### COLORWAY

Gray, midnight, natural, olive



### MSRP

\$50



### URL

[www.duckworthco.com](http://www.duckworthco.com)



### NOTES

Wool is nature's super fabric. Duckworth's Vapor fabric improves on it with a proprietary blend of fine micron Helle Rambouillet Merino wool and a mix of cellulose and recycled polyester. The result, as demonstrated by the Vapor Tee, is a fast-wicking, naturally cooling, lightweight jersey fabric that contains stank while feeling like your favorite cotton T-shirt. We wore one over the summer, and it has rendered all our other T-shirts obsolete.

## 10 MAKE & MODEL Generac iQ2000 Portable Generator



### WEIGHT

46.2 pounds



### MSRP

\$800



### URL

[www.generac.com](http://www.generac.com)



### NOTES

Generators are great, but their noise can be a nuisance at best and, at worst, alert anyone desperate nearby that you're living large. This portable model has three engine settings: quiet fuel-sipping operation, full-power light-it-all-up mode, and somewhere in between. The unit can keep a campsite or small RV running for hours while keeping you abreast of faults, remaining runtime, and real-time power. Need more juice? Link a pair of iQ2000 generators with an optional parallel kit and keep all your gear running.

## 11 MAKE & MODEL Nite Ize CamJam XT Large



### WEIGHT

3.2 ounces



### MSRP

\$14



### URL

[www.niteize.com](http://www.niteize.com)



### NOTES

The original, plastic CamJam granted knot superpowers to the knotless. The only downside was not knowing how much weight it could be trusted to hold. The CamJam XT builds on its petroleum-based forebear with its aluminum, load-rated construction. The XT comes in two sizes, rated to hold 280 and 500 pounds using 2mm to 5mm or 3mm to 9mm rope, respectively. You may be a knot-tying Eagle Scout, but keeping a set of these things in your truck may save you a bit of time when securing some awkward cargo.

## 12 MAKE & MODEL Under Armour UA Ignitor 2.0 Storm Polarized Sunglasses



### FIT

Medium to Large



### MSRP

\$145



### URL

[www.underarmour.com](http://www.underarmour.com)



### NOTES

You can protect your eyes and look cool while doing it. These shades exceed ANSI Z87.1 safety standards, while the polarized lenses block out 100 percent of UVA, UVB, and UVC rays and eliminate glare in the brightest of conditions. They're also resistant to oils and salt water, making them ideal for outdoor adventures or unexpected crises. Plus, the frames are built from titanium and Grilamid, so they're strong and flexible, and the nose-pad is comfortable and adjustable.



12



11



9



10



# SPHINX®

Established 1876



SDP Compact  
Duotone

## DRIVEN BY PRECISION

MACHINED FROM BILLET  
FULL LENGTH GUIDE RAILS  
POLYGONAL RIFLING  
LASER SURFACE HARDENING  
COMPETITION INSPIRED TRIGGER

In 1985, the first semi-automatic SPHINX pistol was created using more than 100 years' experience in precision tooling. In the early 2000's, SPHINX became the ultimate statement in performance throughout the European IPSC circuit. Today, the SPHINX SDP blends pedigree and modern design to deliver renowned craftsmanship and surgical precision to the discerning shooter.

Grab hold of 139 years of precision mastery, find an authorized SPHINX reseller near you at [www.sphinxarms.com](http://www.sphinxarms.com) or call our toll free number: +1 855 KRISS US (574-7787).

**KRISS**  
USA



# RECHARGEABLE FLASHLIGHTS

Story by John Teator

Photos by Michael Grey



Conventional wisdom tells us rechargeable flashlights shouldn't be the first type of light to grab when facing an end-of-days scenario. What we need is a reliable light that's quickly put into use, and disposable cell lights do just that. When the faint beam of your flashlight finally peters out, it'll only take a matter of seconds to swap out the tired batteries for a new set, and — bam! — you've once again got the sun in the palm of your hand.

But what about a long-term survival situation? Between the food, water, and other gear you have to manage, you're bound to run out of batteries at some point. The only thing better than having access to light when you need it is having an unlimited way to power it.

Rechargeable flashlights, combined with alternative power sources such as solar, heat, or crank chargers can rid you of the need to stock and keep track of heavy, disposable batteries that

have a penchant for leaking or discharging over time. Combining alternative chargers with a robust rechargeable flashlight can be a lifesaver, especially if you're in it for the long haul. Let's take a look at a varied selection of rechargeable flashlights that can help when we need it the most. ■■



MAKE & MODEL	Olight S15R Baton	LED Lenser F1R	SureFire P1R Peacekeeper
LUMEN OUTPUT	280 (mode 1)	1,000	600
RUNTIME	360 hrs (mode 5)	Low 60 hrs	46 hrs (low)
OVERALL LENGTH	3.6 in	4.53 in	5.5 in
WEIGHT WITH BATTERY	2.4 oz	4.23 oz	6.2 oz
BATTERY TYPE	Rechargeable Lithium 14500 (1, included) or AA (1, not included)	Rechargeable Li-Ion 18650 (1, included)	Rechargeable Li-Ion (1, included) or CR123 (2, not included)
CONTROLS	Programmable constant on/momentary side switch	Constant on/momentary tailcap push-button switch	Constant on/momentary tailcap push-button switch
MSRP	\$60	\$120	\$250
URL	<a href="http://www.goinggear.com">www.goinggear.com</a>	<a href="http://www.ledlenserusa.com">www.ledlenserusa.com</a>	<a href="http://www.surefire.com">www.surefire.com</a>





Coast HP7R	Nightstick TAC-510XL	Coleman CTAC 40	Goal Zero Switch 10
300	800	400	110
33 hrs (low mode)	8 hrs 45 mins (low mode)	70 hrs (low mode)	4 hrs (high mode)
6.125 in (flood), 6.5 in (spot)	6.25 in	6.25 in	6.69 in
7.2 oz	5.1 oz	7.5 oz	5.7 oz
Rechargeable Li-Ion Battery Pack (1, included) or AAA (4, included)	Rechargeable Li-Ion (1, included) or CR123 (2, not included)	Li-Ion Battery Pack (1, included)	Rechargeable Li-Ion (1, included)
Beam-focusing slide, constant on/momentary tailcap push button	Programmable constant on/momentary tailcap push-button switch	Constant on tailcap switch, hold switch for strobe	Constant on side push-button switch
\$147	\$75	\$70	\$130
<a href="http://www.coastportland.com">www.coastportland.com</a>	<a href="http://www.baycoproducts.com">www.baycoproducts.com</a>	<a href="http://www.coleman.com">www.coleman.com</a>	<a href="http://www.goalzero.com">www.goalzero.com</a>



# HIGHLIGHTS



## Olight S15R Baton

Olight's S15R Baton may be the smallest and lightest flashlight in this guide, but don't underestimate its power or utility. It features a programmable side switch and can be powered by its included rechargeable lithium or optional AA battery. The S15R's body is made of hard anodized aluminum and has a deep carry pocket clip. A feature we really like is its sleek micro USB charging dock. It charges the light by simply placing the flashlight tailcap down on the charger. The S15R also has a magnetic tailcap that allows you to use it as a hands-free worklight.

**Pros:** Magnetic tailcap, innovative charger, long runtime on low

**Cons:** Can be complicated to switch between modes



## LED Lenser F1R

Housed inside its aluminum body is an incredible 1,000-lumen light that doesn't disappoint. It is powered by a 18650 rechargeable lithium ion battery that can run the light on high power for three hours. The F1R comes with an optional glass-breaking, striker bezel and is fitted with a pentagonal anti-roll ring. Durability-wise, it's rated IPX8 so you know it can take a beating in the elements. The battery is charged with an included USB battery-charging cradle.

**Pros:** Bright light, protected tailcap switch

**Cons:** Grip contour feels awkward



## SureFire P1R Peacekeeper

The P1R Peacekeeper is a dual-output LED flashlight equipped with a virtually indestructible high-performance LED, focused to produce a bright 600-lumen beam on high mode. Its knurled aluminum body makes the P1R effortless to grip, even in wet hands. The Peacekeeper is powered by a rechargeable 18650 lithium-ion battery and, if necessary, can also accept two CR123 lithium batteries. The 18650 battery can be charged using either one of its included wall or vehicle chargers. A 600-lumen single output, tactical version is also available.

**Pros:** Robust build, durability, dual power capability

**Cons:** Price



## Coast HP7R

Using Coast's innovative Focusing Optic System, the HP7R Flashlight can adjust from a focused spot beam to a wide flood beam by simply sliding the light head. The body is made of lightweight aluminum with rubber grip rings. This flashlight can use rechargeable lithium or disposable alkaline batteries. Using a micro USB, the batteries can be charged in or out of the light. Plus, the high, strobe, and low modes make this flashlight capable of taking on a variety of situations.

**Pros:** Adjustable beam pattern, battery options

**Cons:** Tailcap switch and beam focus controls are difficult to use at the same time



## Nightstick TAC-510XL

Nightstick's TAC-510XL rechargeable flashlight is made of glass-filled nylon polymer and uses a Cree LED rated at 800 lumens. Along with the LED, this light's high-efficiency deep parabolic reflector creates a usable beam rated at 205 meters. The push-button tailcap switch provides momentary or constant-on functionality and is programmable for one touch high, medium, or low-brightness settings as well as a disorienting strobe. The TAC-510XL runs on a rechargeable lithium-ion battery or a pair of CR-123 batteries. A charger that can run on both a standard wall or car outlets is included.

**Pros:** Dual power options, programmable switch

**Cons:** Bulky charger



## Coleman CTAC 40

Equipped with a Cree XML LED that can produce up to 400 lumens on high, the CTAC 40 can be used in four different modes including low, medium, high, and strobe. This durable flashlight is rated IPX4 water-resistant, so you know it can take some harsh weather and keep going. The battery is charged via a micro USB port that is located on the battery cartridge.

**Pros:** Built-in battery charger, sturdy feel

**Cons:** Does not accept an alternative power supply



## Goal Zero Switch 10

More than just a flashlight, the Goal Zero Switch 10 USB Multi-Tool Kit contains a single battery unit that can accept multiple attachments such as a flashlight lamp, micro USB device charger, and fan. Each attachment is quickly and easily plugged in and ready for use in seconds. It also includes its own solar panel that can charge the Switch 10's battery pack in about four hours.

**Pros:** Multiple tools, includes solar panel for charging

**Cons:** Light attachment is not a replacement for a dedicated flashlight



# THE COMBAT COCK

**GET  
COCKY!**



★★★ ORDER YOURS TODAY ★★★  
**SOETACTICALGEAR.COM**



# WHAT IF?

A Hacker Brings Down the Grid

By Tim MacWelch | Illustrations by Sarah Watanabe-Rocco



W

as it betrayal? Was that the sickening feeling that grew in my stomach as the skulls on my monitor began to pinwheel? They spun and they laughed. It felt like they were laughing at me. Computers were my life, and my liveli-

hood. How could they turn against me like this?

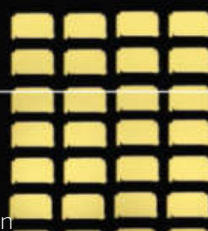
My intern, Mimi, stood behind me, peering over my shoulder at the demonic images unfolding, unwelcomed on the computer screen. I knew exactly what this was. This was the work of some high-level hacker, or a group of them. How big was this event, I wondered. If they hacked Google, what other systems did they get into? No sooner than I completed that thought, I discovered another place they had entered. The lights, the monitor, the AC, and all of the other powered devices in the office suddenly shut down, all at once. Mimi quietly gasped as the

office went dark. She gripped my shoulder.

"What's going on?" she asked, trying not to sound scared.

"It's not good, Mimi." I said as the weight of the situation settled on me. "I think the electrical grid has been hacked."

This edition of "What If?" poses the question many of us have asked since the rise of the Digital Age: What if a computer hacker brings down the grid? To find different approaches to this technological disaster, your favorite urban survival magazine asked three different writers to tell you a tale about surviving this scenario. In this installment, we introduce you to first-time "What If?" contributor, but long-time writer, Jim Cobb. Not only has he published numerous survival books, he's also a well-respected disaster preparedness consultant. Returning to the fold is Erik Lund, a federal law enforcement agent with a vast array of tactical and survival expertise. And then there's me. I have been a





professional survival instructor for the past 19 years and am the author of a new book on survival and emergency preparedness, *How To Survive Anything*.

Here's what happens when we wave goodbye to computers, electricity, law, order, and civility.

## The Scenario



### SURVIVAL SITUATION

Computer hack leads to a grid-down scenario



### YOUR CREW

You and a college intern, Mimi



### LOCATION

Houston, Texas



### SEASON

Autumn



### WEATHER

Normally in the 70s F, but unusually hot in the 80s with high humidity

**The Setup:** You're a female graphic designer in your early 30s and have a small but successful creative agency doing artwork, marketing, and website design for various small businesses and non-profit organizations. Your boutique is located in the trendy Washington Avenue Arts District. It's 7 p.m., and the sun's starting to set after a hot and humid day full of sunshine.

**The Complication:** You go to Google to confirm how your client's website looks via a search engine, but rather than the usual white page with the Google logo, you find instead a black page with morbid skulls and an ominous threat: "You are all pawns. Wake up or sleep forever. You've been warned." Both you and Mimi get the same menacing webpage on your smartphones. Then, it appears on all the websites and apps you visit. You turn on your office's TV to find that all the news stations are reporting about this online phenomenon. As time passes, the broadcasters report breaking news of blackouts in downtown Houston and other parts of town. After some time, they start showing footage of some skirmishes between looters and police. Then, the power in your shop goes out. You realize the whole arts district has fallen prey to the same situation that's happening on the news. How far does this online attack go?



knew as soon as the lights went out that we'd waited too long.

Mimi and I should have beat feet as soon as the first news reports about the hack began to surface. Instead, we just sort of assumed things would return to normal quickly, just like always.

I mean, we'd had power outages before, but they'd never lasted more than a few hours at the most. This, though...this was different.

The good news was that the temperature outside had dropped considerably. It was still pretty darn hot, but at least it wasn't sweltering. The bad news was that, like in any city, the freaks came out at night. And that was during "normal" times. There was nothing normal about what was happening. The news reports had mentioned several incidents of looting and rioting. And, unfortunately, several of the spots they'd indicated were between us and Mimi's apartment complex.

Even so, I figured her apartment was a more realistic goal, at least for now, than trying to get to my house 7 miles away. Mimi could usually bike from my studio to her apartment in about 10 minutes. Walking, it was about triple that, give or take — so we hoped, at least.

There was still enough ambient light to see our way around the studio a bit as we gathered supplies. Mimi said that she didn't have much food in her apartment, so we wanted to bring with us as much as we could with us. Which really was sort of laughable, given the meager stocks on hand. I mean, c'mon, this was a marketing business, not a supermarket. If this would've happened a couple of months ago, though, we'd have been set. One of our clients, a small but growing publisher, previously had us handle a book release party for them. While it was a great success, we had leftover cheese, hors d'oeuvres, and other finger food in the fridge for what seemed like weeks. All of those goodies were long gone.

While I scanned the shelves in my break-room's kitchenette, I asked Mimi to pull all of the batteries from our digital cameras. I had a couple of small flashlights that took the same size batteries. Thankfully, our cameras used AA batteries rather than battery packs. For once, my avoidance of buying the latest and greatest photography gear worked in my favor.

Mimi had her ever-present messenger bag, and I had my small backpack that served as a purse as well as briefcase. We emptied our bags of all non-essential stuff to make as much room as possible. I hated the thought of leaving my laptop, as I'd already convinced myself the studio would be gutted by looters. But, as a business asset it was insured against theft, so I had that going for me, at least. We filled each bag with water bottles, sleeves of crackers, and apples.

I knew the basic route to Mimi's building, having driven her home a couple of times, but didn't know the neighborhood that well. Being that we'd have to take a roundabout way to get there, hopefully avoiding the looting and such, I figured we'd better take the time to make a plan and check a map of the city. I was embarrassed to admit the first thing I did at that point was pull out my phone to go to Google Maps. Old habits die hard, I guess. As I was racking my brain, trying to remember if the gas

## DISASTER-PREP EXPERT: **Jim Cobb's Approach**

station down the block had maps — assuming they were even still open during the power outage — Mimi suddenly jumped up and ran over to the reception desk. I swear, I could almost literally see a light bulb burning over her head as she rummaged through the desk drawers.

I heard her exclaim, “Yes!” and she came back and sat down, setting on the table the Yellow Pages. My puzzled look was answer enough so she opened it up and rifled through the first few pages. Street maps! I’d forgotten that phone books often had maps in the front or back. Now we were in business. We plotted a route that would take us around the areas we already knew were bad news, keeping our fingers crossed that we’d avoid the looters and rioters. Even so, safety was still a concern.

Neither Mimi nor I carried a handgun, though I’d grown up around guns and could shoot fairly well. She at least had a small canister of pepper spray. She said her boyfriend had insisted she carry it when she began riding her bike back and forth to the studio. I thought for a moment then walked back to the kitchenette. From a drawer there, I pulled a large bread knife. The blade was about 8 inches long and serrated. It was pretty thin, but I knew it was sharp. I had no idea if I’d be able to actually use it to harm someone, but I felt better knowing I was armed. Since I had little interest in sliding a sharp blade down the back of my pants, I grabbed the empty cardboard box from the crackers we’d put in our bags. Folding the cardboard over the blade a couple of times, then cutting it to size and covering it with duct tape, I made a fairly decent sheath. I slipped it into my belt at the small of my back. Not the greatest solution, but it would have to work for now.

The basic plan was to get over to Mimi’s apartment and spend the night there. Mimi’s roommate, Victoria, was out of town visiting family and had left her bicycle behind. If the trains weren’t running in the morning, I could borrow the bike to get back to my house. While Mimi’s apartment building wasn’t really on my way home, it was still closer to it than my studio, in a roundabout sort of way.

I tried calling my neighbor to see if she could run over and check on Vinny, my Maine Coon cat, but neither Mimi nor I could get a call to go through on our cells. The phones would just search for a signal for a few minutes, then disconnect. There was no dial tone on the landline, either.

We headed out the back door, after making sure all of the blinds and curtains were completely closed at the front of the studio. I figured there was a slim chance looters might pass it by if they couldn’t see anything worth grabbing. Mimi unlocked her bike and began pushing it. Our initial plan had been to sling our bags onto the handlebars, but once we were actually outside, we were both very reluctant to do so. If we suddenly had to bolt, the bike would probably be left behind. I toyed with the idea of just leaving the bike locked up, but figured it wasn’t much extra effort for one of us to push it and we might end up needing it at some point.

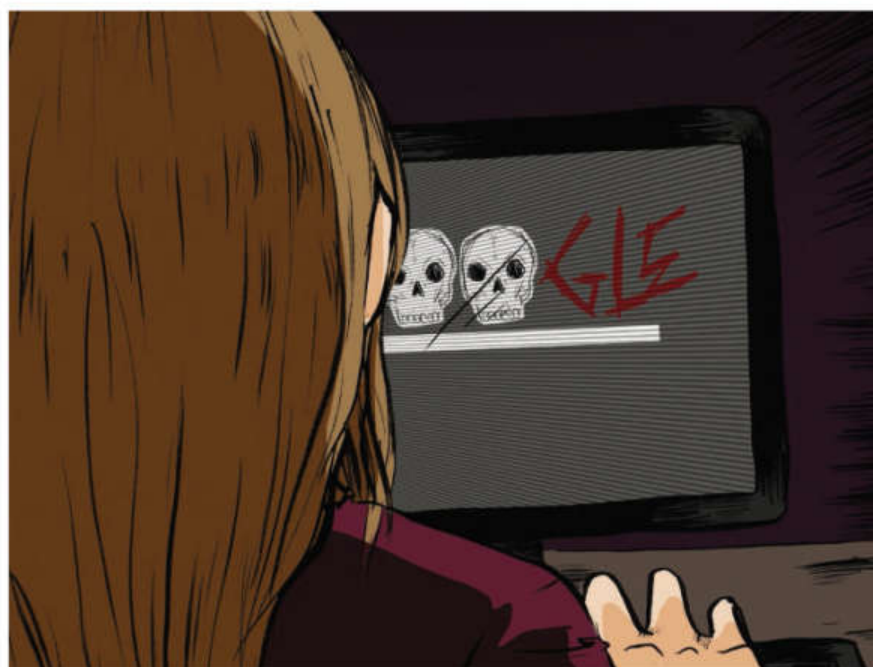
The city was surreal. I’d never seen it so dark. No streetlights, no neon lights over the restaurants and taverns — it was downright spooky.

I could see candles or oil lamps in a few windows as we walked by apartment buildings. The occasional passing car shone like a beacon, as there was nothing else competing with the light from the headlights. Mimi and I talked in whispered tones, instinctively wanting to match the darkness with quiet.

We stuck to the side streets as much as possible. Despite the late hour, there were a lot of people walking around. Most of them were just hanging out, talking to their neighbors, presumably about the blackout and related matters. There were a few small groups here and there that caused us some concern, but we managed to avoid being accosted. Thanks to the maps we’d torn from the phone book, we got lost only once.

After just shy of an hour of walking, we made it to Mimi’s building. Rather than leave the bike locked on the rack outside, we took it into the apartment with us. Then, just to be safe, we went back downstairs and grabbed Victoria’s bike, too. I turned on one of the flashlights and balanced it on its butt on a table, lighting up much of the room. Mimi quickly pulled down the shades and closed the curtains in the living room. A bit of searching through drawers found a few candles and some matches. The food in the fridge was still somewhat cool so we grabbed milk, lunchmeat, and some odds and ends for dinner. I told Mimi that whatever we didn’t eat soon would end up just going to waste unless the power came back on overnight. She had some ice in the freezer, but didn’t have any coolers, unfortunately. We each took quick, lukewarm showers. Obviously the building had electric water heaters rather than gas. But the fact that we had running water was a blessing.

Cleaned up and with full stomachs, we settled in for the night. We each said a prayer that things would be back to normal by morning.





## FEDERAL AGENT: Erik Lund's Approach

The darkness only lasted for a few seconds before the boutique's emergency lights activated. I could feel Mimi's grip on my arm starting to relax. The emergency lights created an eerie mix of light and shadow that almost resembled some private party room in the basement of a nightclub.

"What do we do now?" Mimi asked.

"There's nothing more we can do," I replied. "Let's get everything locked up and try to find a way home."

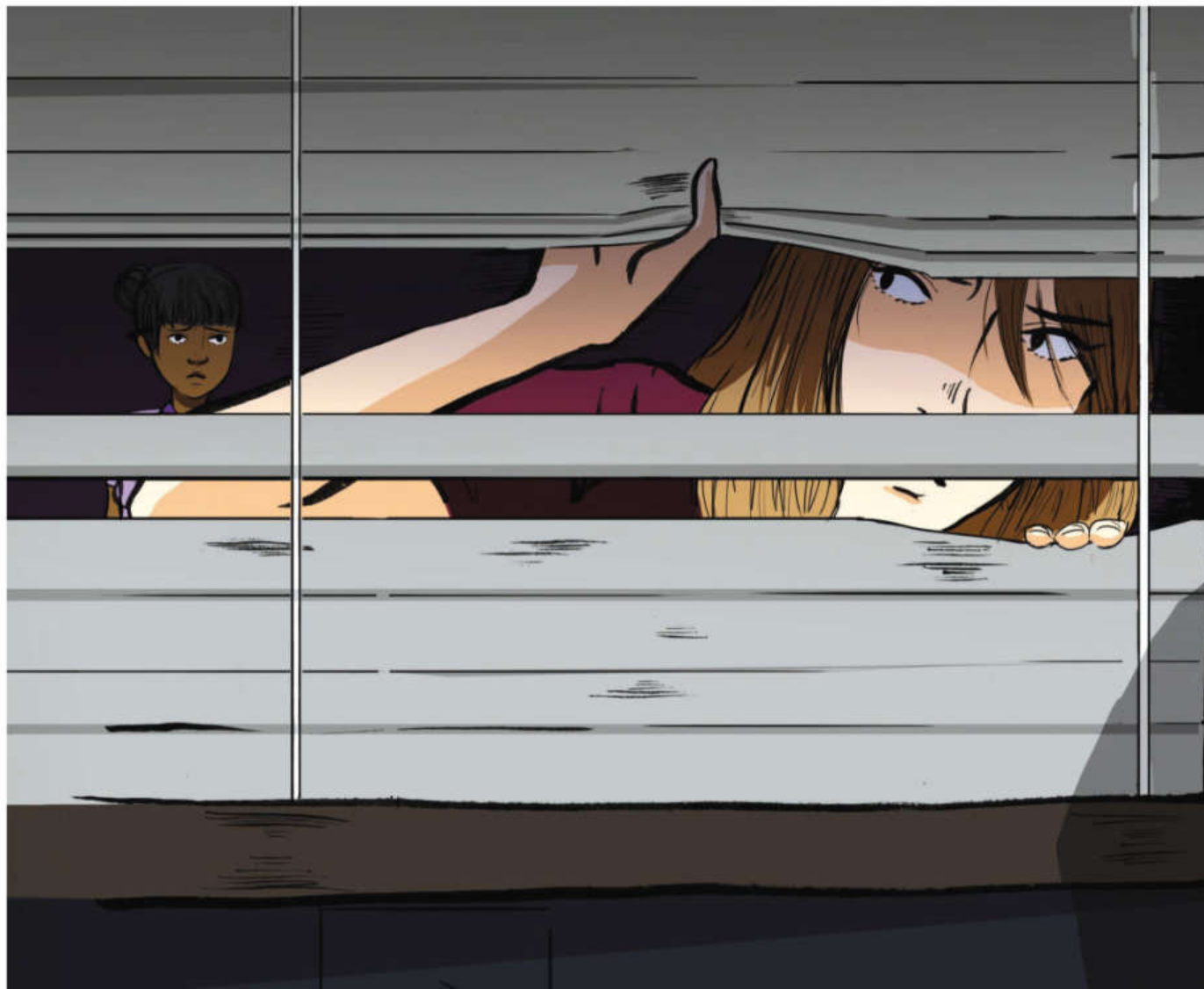
After shutting down the computers and securing some important documents and computer hard drives in the studio's safe, it was time to find a way home.

I wiped away the sweat from my forehead. The power had only been out about 15 minutes, but it was already getting warm inside the boutique. The stagnant air was thick and humid with no options for relief. The idea of opening the windows and front door for circulation was out of the question. Even if it was cooler outside, doing so would risk inviting in the wrong people — the kind who were looking to take advantage of the situation and possibly loot the place. No, the doors

and windows would have to be locked, but that also meant that we would have to leave. It wouldn't take long before the temperature inside the store would climb into the 80s. Trying to sleep in this virtual oven would be nearly impossible, and staying up all night in a sweat-box wasn't an attractive option, either.

Getting home was my only real option, and it wasn't going to be easy. My house was only a quick 7-mile train ride away, but trekking that distance in heels was simply not going to happen. I made a mental note to myself: "Leave a set of running shoes at the office from now on." If I ever had to walk home again, I would be better prepared next time.

I decided my first option was to phone a friend for a ride. I wiped away the sweat and started scrolling through my phone, looking for someone close to hit up for a ride home. Ahh, Joshua will do it. A quick second later and his phone started ringing. Then my heart sank a little — his phone went to voicemail. "Damn!" I yelled out of frustration and a bit of panic. Mimi handed me a cold bottle of water and a cup of yogurt she had snagged from the break-room's refrigerator. "Here take these while they're still cold," Mimi said. "We never did stop for dinner."



I looked at her and smiled and remembered why I had selected her from all of the intern applications. Despite her fear of the dark, she had a strong work ethic and always offered good options for getting the job done. "Thanks," I said. "That sounds perfect right now."

I sat down and sent a quick text to Joshua explaining my situation and then started to eat my yogurt. Mimi asked, "So what's the plan?" Thinking through my options for a second, I said, "I can't walk home in these heels, so it looks like I'm just gonna wait for Joshua to get back to me. I can always call a cab to take me home, but don't worry about me. You've got your bike — you should go home. I'll be OK." Mimi cast a very disapproving motherly look at me. "Uh, no, I'm not leaving you alone," she said. "I'm staying with you. We'll get home together." I smiled and gave her a look of thank you. I didn't want to be alone, but I couldn't ask her to stay with me, so I was very glad to hear her say that. "OK, let's figure out how to get us home," I said.

After trying for almost a half hour, all of the cab companies were booked. Apparently, a lot of people in the Arts District work late and needed rides home too. I was on a callback list for when a cab became available, but the waitlist was long and it might be several more

hours before my turn came up. We started calling ridesharing services, but that's when the phone lines stopped working. The network was probably overwhelmed or affected by the black out, too. The heat in the store was almost unbearable, and my shirt was now almost completely soaked. I said to Mimi, "I need to get some air; I'm going to go outside." Mimi nodded, and went with me to unlock the front door. Stepping outside provided some relief. A gentle breeze made all the difference. It was still hot, but it felt cooler outside than it did in the store. Looking around the area, everything was still dark except for a few buildings that clearly had emergency generators, as their lights were still working. Still, it was as quiet as a cemetery.

"Let's just go to my apartment," Mimi said.

"Thanks, but there's no way I can walk 2 miles in heels," I responded.

Mimi smiled and said, "You won't have to."

I shoved several bottles of water into Mimi's backpack along with my heels. I grabbed a knife from the break room and taped it to the shoulder strap of the backpack. It was just enough tape to hold the knife in place, but it would break free if I needed to grab it. It wasn't much for defense, but it was better than nothing. I pushed the bike outside and locked the front door. I looked over at Mimi.

"Are you ready?" I asked. Mimi stood up from her stretch and with a smile said, "Yep, try to keep up."

While I knew a lot about Mimi's professional skills, I knew next to nothing about her personal life. Turns out she was an amateur triathlete, which is one of the reasons that she rode her bike to work every day. It was a way to get in some bike training. She also ran cross-country in high school, but started competing in triathlons when she got into college. She said the 2-mile run home would be just a little warmup for her. I would ride her bike barefoot and carry the pack with our supplies should we need to detour and head away from trouble.

I laughed at her and said, "I don't think it'll be a problem."

"Challenge accepted," Mimi said, and took off running.

I started peddling and did my best to keep up. About a mile into the journey we crossed out of the blackout zone. The oppressive heat had brought some people out into the streets looking for relief, but being that the Arts District was a business area, there were very few homes or apartments located in the blackout zone. A short 15 minutes after we started, we arrived at Mimi's apartment complex.

"Home at last," she said. "Good job keeping up."

I laughed off the remark, but was ashamed to admit that it about killed me to do so. Note to self: get my fat ass back in the gym and buy a bike, a backpack, and some supplies to keep at the office in case this crap happens again. As I got off the bike and pushed it over to Mimi, she said, "I think it's time for a big glass of wine."

"Ya know," I said, "that's the best idea you've had all day."

**"I grabbed a knife  
from the break  
room and taped  
it to the shoulder  
strap of the  
backpack."**



## SURVIVAL EXPERT: **Tim MacWelch's Approach**

I had two questions that I could not answer: How widespread was this hack, and how long would the electricity be down? If the power would be back soon, Mimi and I could just stay at the office. But if not, we might want to get out of Dodge while the getting was good.

But where to go?

I tried several times to call my mom, who lived an hour's drive west of Houston, but the only sound the phone made was a beeping pulse. Mimi got the same noise, desperately trying to call her friends and boyfriend. All of the phone calls of a frightened city must have swamped the system. It sank in slowly that we might be on our own for a while.

Mimi looked like she was ready to bolt, but I lied to her and said that everything would be OK. I knew it wouldn't, but it was what she needed to hear. I asked Mimi what she had at her apartment in the way of food and supplies, and her response was none — Keurig coffee, plastic utensils, and maybe a package of instant ramen or two. She was a college student after all.

Mimi's place was about 3 miles south of the shop, while I lived more than 7 miles away. But at my home I had food, a propane grill to cook the food, and several water cooler jugs of water, among other supplies that I had purchased after the last hurricane. We talked over our options of leaving or staying at the office, even talked about staying at a hotel or trying to hail a cab. Neither of us had much cash though, and we knew that the plastic cards we lived off of would be little help to us with the power out. "Looks like it would be our best choice to go to my house," I said, and Mimi reluctantly agreed. We talked about taking turns on Mimi's bike, one walking and one riding. But I was afraid that the nice new bike would be a tempting target for theft. I had been robbed for my bike when I first moved to town, and I still had a tiny scar under my chin where my face hit the asphalt during the attack. Again, I urged Mimi to side with my plan — we stick together and we just walk.

We had worked through dinner, before things took their bad turn, and we were both in need of food and drink. We pooled our cash, locked the door, and went a few doors down to the sandwich shop. As we walked, we saw that the street was packed with cars, most of them abandoned. This seemed odd, but we didn't give it much thought at the time.

The doors were open at the eatery and some flashlights had been set about for lighting. The shop owner and his son were the only ones working and the place was packed. It turned out that they were just giving away the food. "It won't keep in this heat," they said. I had gotten to know the owner and his family since opening my business around the corner. I felt bad asking, but as he handed me and Mimi a brown paper bag of sandwiches, I asked him if they had a car and could give

us a ride out of town. He said a car wouldn't do any of us any good. He went on to explain that before the power went out, all of the stoplights went green. The hacker's doing, no doubt. Every intersection had wrecks, and many people had been killed. The ambulances couldn't even get to most of the accidents. Things were far worse than I initially guessed.

I hated to ask him, but I did: "We've going to have to walk several miles in the dark tonight. Can we borrow one of your flashlights?" He looked hesitant at first, but glanced over at the dwindling stack of meats and cheeses. "Sure," he replied. "At this rate we'll have to close up shop in a few minutes anyway." I asked where they were headed, hoping they were headed the same way as us, but was crushed when he said they were walking east. My place was to the west.



I took a flashlight, thanking the man and his son profusely. Mimi and I walked quickly back to our office. No more than 10 steps from the sandwich shop, I noticed two men peering into various cars, and thought they were up to no good. Our movement caught their eyes and they began staring at us. The larger man, a fat and sweaty looking oaf, called out, "Hey honey, what's in the bag? What's the matter? Cat got your tongue? You got a place to go for tonight? We've got a place. You can go with us."

They were about 10 steps behind us as I unlocked the front door, pushed Mimi inside, and locked it behind us. Without a word, we both started drawing the blinds shut. Mimi and I both jumped when one of the men started banging on the door. "We know where you are," the voice jeered.

Retreating to the back of the office, I tried to dial 911 on my mobile phone, but only heard the beeping again that indicated the lines were jammed. We agreed that any thoughts of staying overnight were out of the question now that we had stalkers.

By the light of the flashlight and the decorative candle from the bathroom, we scavenged the office for everything that could be remotely useful. We found some chocolates at the bottom of a desk drawer and an old bottle of salad dressing from the small fridge in the break-room. There were several bottles of water in there, too, and some odd bits of clothing and a broom in the closet. As I looked at the mismatched items, an idea started to form.

"Mimi, who would you walk right past on the street? Who would you not even look twice at?" I asked her. "A salesman, or one of those guys with fliers," she responded. She gave several other answers, until she hit the one I was looking for: "A homeless person!"

"Yes," I said with a growing smile, "a homeless person is ignored by almost everyone." Every day America allows people to suffer on the streets with very little in place to help them. But today, it was the thing that just might make us invisible.

We still had running water, and in the bathroom we washed off every hint of makeup from our faces. Then, I took a piece of the chocolate and melted it in my hand. I wiped it randomly on Mimi's face and hands, and mine as well. We looked like we hadn't had a bath in a year, but we still smelled of perfume and now chocolate. As I mentioned that hole in our plan, Mimi grabbed the oil and vinegar salad dressing and said, "This is expired — let's try it." She wiped a handful through her normally pretty hair and soon looked like a greasy drowned rat, a rat that stank of rotting food. I beamed with pride at my crafty protégé. "Me next," I said.

Then I put on an ugly, oversized shirt left at the office by an ex-boyfriend, and Mimi donned a sketchy looking trench coat that a former intern had left behind. A little more chocolate wiped on the clothing made the garments look like they came out of a trash

heap. I took up the trash bag from the larger office can, with trash and all. In it I placed our water bottles, brown bag of sandwiches, the chocolates, and our purses. I slung it over my shoulder and handed Mimi the broom. "You carry this — it's the closest thing to a weapon we have," I said. Just as we were ready to make our exodus into the parking lot behind the shop, there was a banging at the front door like before.

"Hey, girlyies!" the man called. "If you open up the door, we'll share some drinks with you!"

I unlocked the back door and we fled, leaving a lit candle on the desk so the men would think we were still inside the office. We ran for the first few blocks, attracting some very strange looks as we went. To the average passerby, it must have looked like one bag lady stole a bag of trash from another bag lady, who was chasing her with a broom.

After a few more blocks, we slowed to a walk and caught our breath. People still looked at us, but quickly averted their eyes and looked at anything else as we passed them by. It was as if they could catch homelessness by looking at us too long. Due to our run through the neighborhood, we reached the freeway sooner than I anticipated. It was gridlocked, with vacant vehicles everywhere. Plenty of people were milling about in the failing light, but our path was relatively clear. We walked side by side on the road, and anyone who glanced our way quickly turned and looked somewhere else.

We paused for a moment, draining two water bottles and sharing a sandwich, but we didn't dare delay too long. As we hid behind a vacant box truck on the freeway, we saw fires spring up on either side of the freeway. Random vehicles, businesses, and homes were burning. This night would never be forgotten by anyone who can survive it.

We walked on and saved our flashlight until the twilight had completely faded and we really needed it. About a mile from my home, people started to approach us in the dark, drawn like moths to the light. Most were asking about the flashlight. But as soon as they drew near, I lifted the light beam to shine upon our faces, as if telling some campfire ghost story. Our appearance and our smell were more than enough to inspire people to say "Sorry, don't worry about it," and "Never mind, thanks anyway." One kind older man even offered us some bottles of water, saying that we looked like we could use them. Mimi smiled and said "No, thank you. We're fine now." Walking down my neighborhood's exit ramp from the highway, I finally felt like we would be fine.

The lie I had told Mimi earlier had turned out to be true. We were going to be OK, but this night could have easily gone another way. And as I saw my house numbers in the dying glow of the flashlight, I knew we were going to be safe — for a little while, anyway.

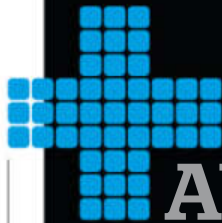


## Conclusion

I hope it was worth it. I hope you're happy with your high-tech world of push-button ease and the inevitable vulnerability that comes along with it. Computer hacking is an everyday part of the modern world, and a looming threat to the modern American way of life.

When a few disenfranchised weirdos living in their mom's basements or a few well-schooled hackers from an opposing ideology are able to steal information, drain bank accounts, shut down utilities, and bring our world to its knees — at the end of the day, we really only have ourselves to blame. We handed them the keys to it all. So what do we do to keep this work of fiction from becoming fact? Should everybody go Amish overnight? No, that's not possible, nor is it the right approach. As individuals, the best we can do is become more self-reliant and more independent from modern technology. This gives us a cushion to fall back on, in any type of crisis. And those of you who are part of big business or are bureaucrats, you need to take hackers as the serious threat they really are. Spend a little of your money to fight them, or lose it all when they shut you down.

Finally, our culture needs to understand that newer, faster, fancier, and more interconnected technologies aren't always a good thing. The more parts there are in a system, the more parts that can fail — or in the case of this story, be used against us. Take this edition of "What If?" very seriously, folks. Don't let your precious computers and high-tech gizmos become the Trojan Horse that gets all of our cities sacked.



## About Our Panel:



### Jim Cobb

Jim Cobb has studied, practiced, and taught survival strategies for about 30 years and resides in the upper Midwest. His books include *Prepper's Home Defense*, *Countdown to Preparedness*, and *Prepper's Long-Term Survival Guide*. Jim's primary home online is [www.survivalweekly.com](http://www.survivalweekly.com). He is also active on Facebook at [www.facebook.com/jimcobbsurvival](http://www.facebook.com/jimcobbsurvival). Jim offers a consulting service as well as educational opportunities at [www.disasterprepconsultants.com](http://www.disasterprepconsultants.com).



### Erik Lund

Erik Lund has more than 20 years of law enforcement experience — with much of that time spent as an instructor of firearms, defensive tactics, and use of force. He served as a Virginia State Trooper before accepting a position as a federal agent. Lund is also a senior instructor at Mike Seeklander's Shooting-Performance LLC, a tactical training company. As a champion competitive shooter, he's earned several regional, state, and national three-gun titles and is ranked as a grandmaster by the United States Practical Shooting Association.



### Tim MacWelch

Tim MacWelch has been a survival instructor for the past 18 years and has trained members of the U.S. Armed Forces, the State Department, and the Department of Defense, among others. He is also a public speaker on preparedness and is the author of *Prepare For Anything* and the upcoming *Hunting And Gathering Survival Manual*. You can follow him on Twitter @timmacwelch or get more information at [www.advancedsurvivaltraining.com](http://www.advancedsurvivaltraining.com).

How would you react to the same scenario as played out by our panel?

Share your plan with us on our Facebook page: [www.facebook.com/OFFGRIDmag](http://www.facebook.com/OFFGRIDmag).

THE NEW

# CRUSADER



Psalm 144:1

Blessed be the Lord  
my Rock, who trains  
my hands for war,  
my fingers for battle

407 928 2666

[WWW.SPIKESTACTICAL.COM](http://WWW.SPIKESTACTICAL.COM)



# IT'S A TRAP!

**Bait, Snare, and Box Your  
Way to Survival With  
These Trapping Methods**

Story by Tim MacWelch



## **WARNING!**

The following article is a brief overview on setting traps and snares and is not meant to be a thorough in-depth guide.

Some traps are inherently dangerous and are set at your own risk. For more information, consult with a reputable trapper or survival instructor.



It doesn't get much worse than this. The collapse of society has come and gone. What's left is a wasteland of devastated metropolises, a loose society ruled by roving warlords, and scattered remnants of resources. You now subsist on what you find in the urban jungles and the surrounding wilderness.

But how did you go from clueless cubicle monkey to keen trapper?

Your transformation from John in the IT department to Grizzly Adams wasn't easy, but it had a powerful driving force — hunger is a very persuasive motivator. If we can stay alive long enough to figure out a new skill through trial and error, then we've learned what to do and what not to do. But there's another path. We can try door No. 2. Learn a new skill and move toward mastery of it while we still have expert guidance and a safety net in place. If door No. 2 sounds like a smart way to learn how to secure some food, then read on.

Trapping is the ancient art form of harvesting animal foods while you're absent from that area. It dates back thousands of years. Many of the different traps that our forebears used have survived into modern times, still used by traditional cultures around the globe — and for good reason.

Traps are like little mechanical hunters that you set out on the landscape. They hunt for you while you're off doing other tasks. They hunt throughout the night while you're sound asleep. They hunt in places you wouldn't want to sit in for very long, like swamps and icy woodlands. With the proper construction, de-scenting, placement, and baiting, your "automated hunting machine" can be just as effective as the devices of the old-time trappers.

And there's no shortage of traps to try. There are foothold traps, body grip traps, "live catch" box traps, and traps that defy classification. There are also snares and deadfalls, which are the two common types that we will discuss here. Just follow these steps, and you can set traps to provide yourself with meat, fat, and useful hides.



DAVID PARSCH/ISTOCKPHOTO.COM

## Seek the Best Quarry

If you're trapping for food, then this is all about the calories. In that context, the best animals to trap prey are fatty animals. Raccoon, porcupine, and beaver have much more body fat (and therefore calories) than rabbits, squirrels, and groundhogs. People have literally starved to death eating only lean rabbit meat (look it up, it's called "rabbit starvation"). Now this doesn't mean that you should avoid trapping rabbits and other lean game. It just means you need to diversify your menu.

Another aspect to consider is the animal's gullibility. "Will they fall for this trap?" is what you should be asking yourself when you select a target game species and set the trap to match your target. Some animals aren't too bright and will fall for anything, like porcupines and groundhogs. Other animals are very discerning and intelligent.

## Avoid These Common Mistakes

Poorly crafted traps are a big problem in trapping. So are traps that are loaded with human scent and traps placed in "dead zones." The first problem of craftsmanship can usually be remedied by practice and with patience. Make these traps over and over, until it becomes second nature and they function perfectly. And take your time with the work, it's not a race.

The second problem is human scent. Wary animals will avoid a trap with too much human skin oil and skin flakes on it (yes, their noses can be that sensitive). Wipe your hands and the trap with dirt, crushed charcoal, and local non-toxic aromatic plant parts (like pine needles) to cover the human scent. Do this to your hands before collecting the materials to make traps. Do it to hands your and traps before you go out to set them.

Finally, avoid trapping in "dead zones" by selecting trap sites with plenty of tracks and other animal sign in the area. Some places just don't have that many animals, and this is a poor place to trap.



Diane Labombardie/istockphoto.com



# Play Your Numbers



Since our first ancestor figured out the first trap, the art of trapping has always been a numbers game. You're living in a fantasyland if you think you can just set out one trap and feed yourself with it. Professional trappers with modern traps enjoy only about a 10-percent return on their activities. They have to set out dozens of traps to catch just a couple of animals each day. And historic trappers during the American fur trade era probably had even less success with their field-built snares and finicky old-fashioned footholds.

## Fixed Snare

Snares are a type of trap that constrict around an animal and either hold them securely or actually kill them. Snares can be made with rope or wire, easily scavenged from modern homes, businesses, and vehicles. But for best results, we should stock up on actual snare sets made from braided steel cables with metal locking mechanisms. These are far stronger and more durable than most improvised snares, and any quarry you've caught is less likely to escape.

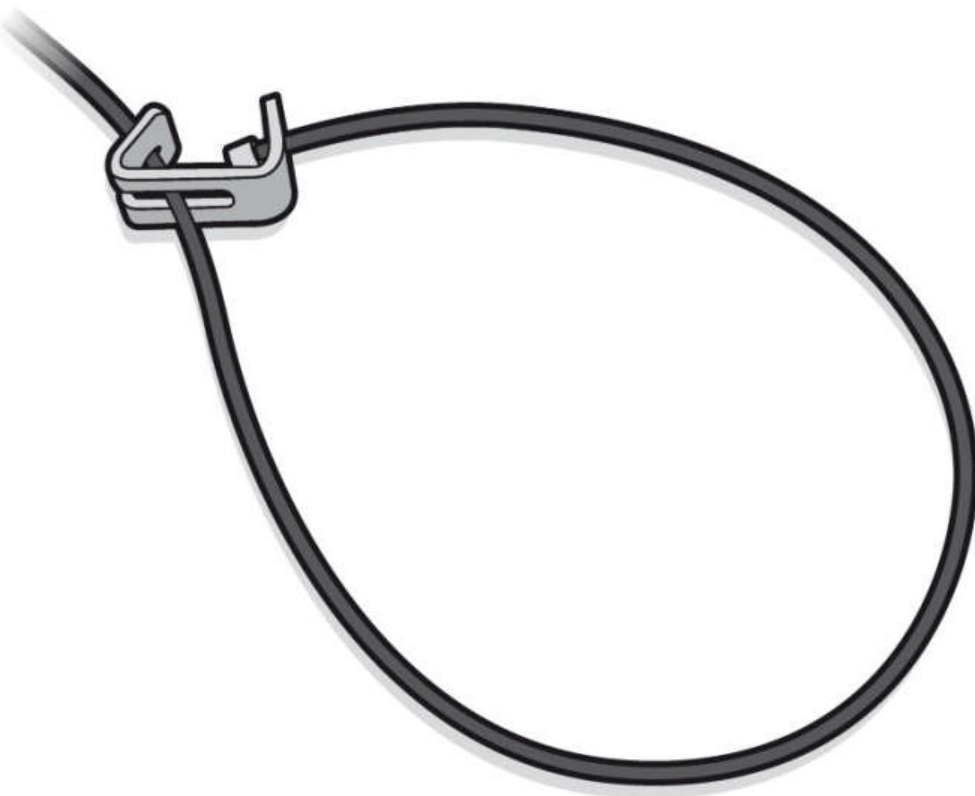
The fixed snare is typically set along small animal runs and paths, or over the mouth of animal burrows. There are typically no baits involved, we just catch the animal because it runs through the snare loop, gets hung up, and then tightens the noose by trying to run away. This snare can work well for rabbits (who are always moving quickly and likely to tighten the noose fast). It also works for slower creatures like raccoon, groundhog, and possum.

**Step 1:** Find an animal run or burrow opening as a trapping site. Look for tracks to confirm that it's active and to get an idea of the species that are using it.

**Step 2:** Find a nearby sapling or shrub to use as an anchor for the snare. You could also drive a stake in the ground for attachment if nothing suitable is available.

**Step 3:** Attach the snare to the anchor and use twigs to prop the loop open in the run or over the burrow mouth. Make the opening the right size to fit your target species' head. Too small, and they can't fit in the noose. Too big, they simply jump through the "hoop."

**Step 4:** Check the trap once or twice daily from a distance. Reset it if it gets knocked down. Collect any dead animals and butcher immediately. Use a spear, bow, or firearm to dispatch any live-caught animals.



# Spring Pole Peg Snare

This versatile snare can be activated by an animal running down a trail (like a fixed snare), or it can be baited to lure in an animal. This trap includes the addition of a spring pole, which is a flexible sapling tree that lifts the snared animal up off the ground. Ideally, the spring pole should be strong enough to lift the animal at least 5 feet off the ground to keep it out of the reach of scavengers. Here's how to set up the spring pole peg snare.

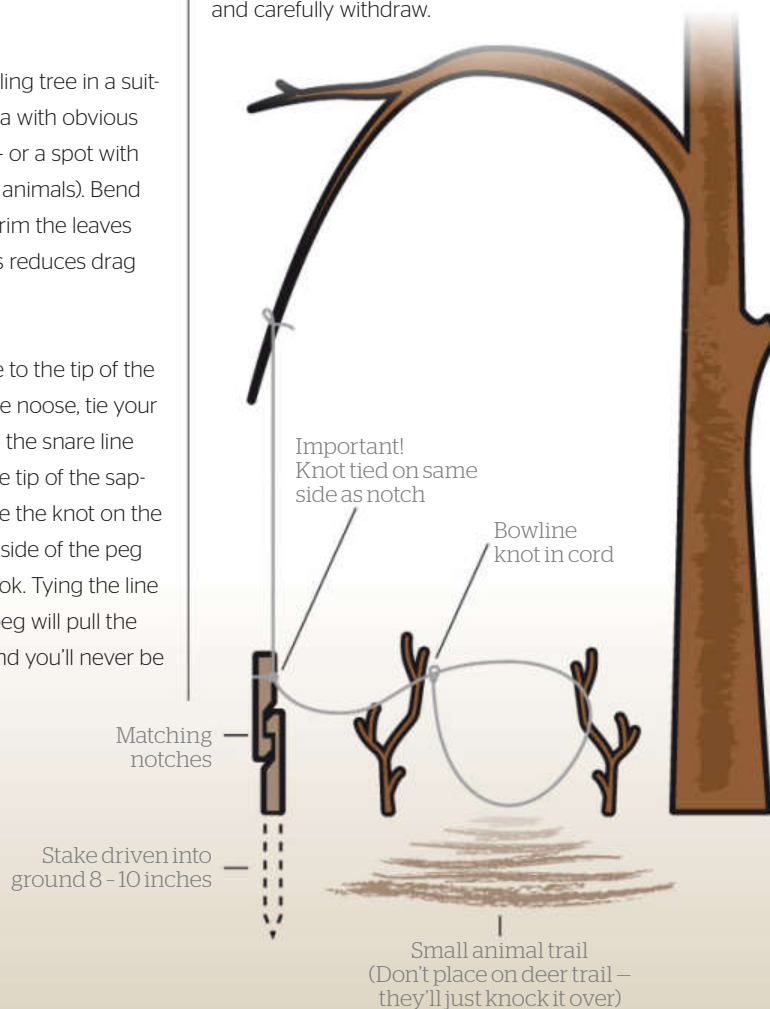
**Step 1:** Tie a bowline knot or similar loop in the end of a 3-foot rope and pass the free end of the rope through it (or better yet, get a manufactured cable snare noose). Carve two sticks to have hook-like notches. One stick needs to be only about 6 inches, and the other will need to be about 1 foot with a point at the non-notched end. This longer stick will be driven into the ground like a stake.

**Step 2:** Find a flexible sapling tree in a suitable trapping area (an area with obvious animal tracks and traffic – or a spot with food, water, and cover for animals). Bend the small tree down and trim the leaves and branches from it. This reduces drag when the trap goes off.

**Step 3:** Tie your snare line to the tip of the sapling tree. If using a rope noose, tie your 6-inch trigger peg stick to the snare line about 1 foot away from the tip of the sapling tree. Make sure you tie the knot on the 6-inch trigger peg on the side of the peg into which you cut the hook. Tying the line on any other side of the peg will pull the trigger at an odd angle, and you'll never be able to set the trap.

**Step 4:** Drive your foot-long, notched stake into the ground with a rock or hammer. Make sure the stake is placed in a spot where the line from the tree will be plumb (completely vertical, not pulling sideways). If the stake and the line from the sapling tree aren't plumb, they'll be very hard to set.

**Step 5:** Bend the sapling down and put it under your armpit so you can safely hold it and use both hands. Set your noose in the animal's path, propped open with sticks. Set the trigger and carefully withdraw.



**Important Safety Note:** Once a trigger is set and the spring pole is pulling on it, never touch an open noose with your fingers. Use a stick to adjust the noose. If you try to hold the noose or fiddle with it by hand, and the trap goes off unexpectedly, the noose can tighten around one or more of your digits. As the spring pole goes up, the noose will either skin your fingers or remove them. Remember that traps can be dangerous not only to the prey, but to the trapper as well. Be very careful and respectful of all traps.

## Use Better Baits



Not all traps use bait to lure in your quarry. Some traps are simply placed in trails and rely on the animal's passage to engage the trigger. But with the traps that are bait driven, that bait had better be just right. You want to bait with something that matches the animal's diet. Use red meat, fowl, and fish for carnivores and omnivores. Use nuts, roots, and fruits for herbivores (rabbits don't care for bloody meat chunks). It's very helpful to use something that's out of season or out of their reach. This scarcity will entice them further. Just remember the old trapper's adage: Don't bait with corn in the middle of a cornfield. This means that you should avoid using a common bait item that the animal can easily get without going toward the strangely scented and ominous-looking contraption.



## Follow the Rules



Walter Galloway/istockphoto.com

In an emergency, you'll do whatever you must, rules be damned. But in normal circumstances, check your local trapping regulations before engaging in any trapping activities, practice, or otherwise. Get a trapping license, as many areas require this. Get a signed letter that grants you permission if you are trapping on private land that you do not own. And obey the trapping season for your target game species. Certain animals are only legal to trap at certain times.

## Greasy String Deadfall

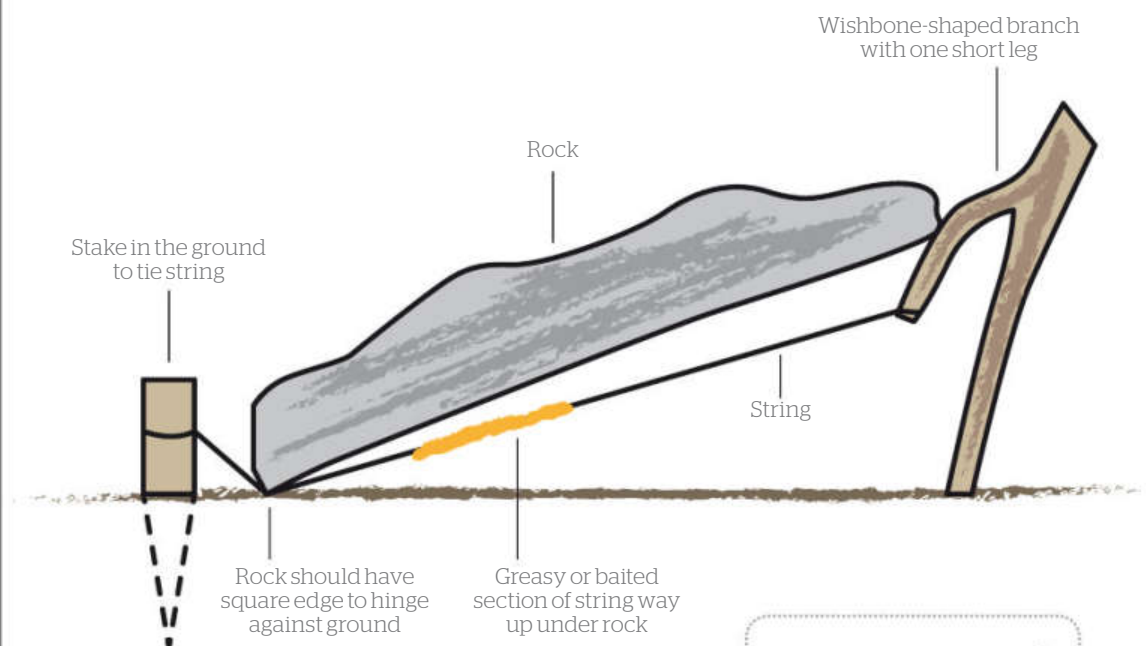
Our remote ancestors never had steel cables or Internet websites where they could buy a jar of mouse paste for trap bait (yes, that's a real product). They worked with basic natural materials that were found all around them, and they worked with the things at hand. This trap is part of a class called deadfalls. These traps involve a trigger system that holds up a rock, log, or similar weight. When the trigger is tripped, the weight falls upon the prey and crushes it. It's not a pretty kill, but it gets the job done.

The greasy string deadfall is the least complicated trap in this article, best suited for small creatures, particularly rodents. For this trap, the bait is mashed into a piece of twine (which is holding up the weight). The animal goes under the weight to chew on the twine, and it breaks — dropping the rock.

**Step 1:** Gather your components. This trap consists of a forked stick, a deadfall weight, a length of thin twine, and suitable bait. You also will need something to secure the free end of the twine. We can get the best results by choosing a forked stick that has nearly parallel branching, and one long fork leg and a shorter one. The twine should be thin and barely able to support the weight of the deadfall. It could be hand-woven string, or a piece of cord you scavenge. The bait should be a good match for your target species.

**Step 2:** Tie one end of your twine to the shorter branch on the forked stick and the other end of the twine to a small shrub or stake in the ground. The deadfall weight should be placed against the forked stick so that the twine is tight and running under the weight, but not touching it. You're not done yet, but simply placing the deadfall weight in position so you can determine where to place the bait. Remove the weight and add the bait.

**Step 3:** Squish the bait into the twine deeply, in a spot deep under the weight. Replace the weight and check the trap daily.



**TIP:** Angle of rock should be less than 45° for quick drop

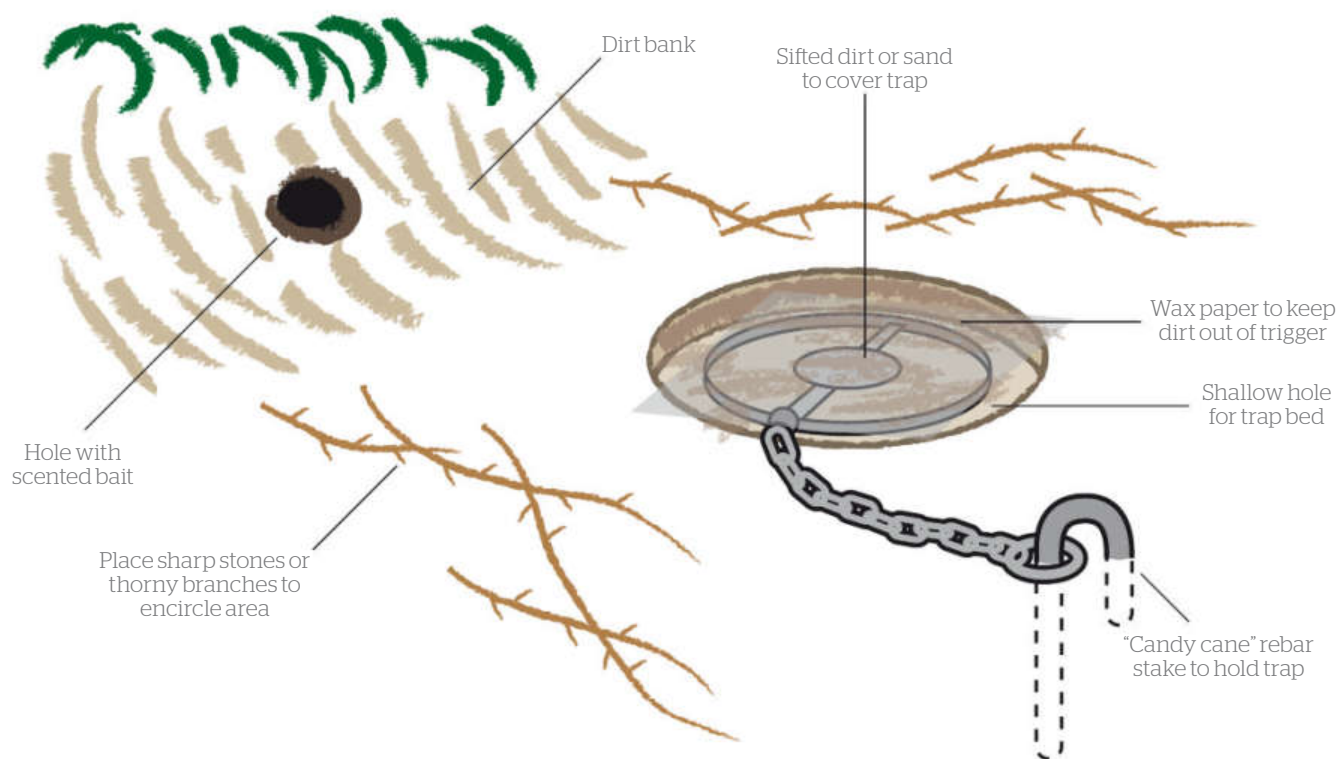
# Foothold Trap

The foothold trap dates back centuries, showing up at least as early as the 1600s. These traps consist of clamping jaws that hold an animal's foot after they set on it. These traps have been used for catching small game and larger animals, even bears. Foothold traps don't usually kill an animal (unless they die of stress). The quarry is typically dispatched by the trapper. While you can't make a reliable foothold trap from scratch in the wild, they're still a great trap to know – and a better trap to stockpile. Here's how to set one, tailored to catch predators.

**Step 1:** Locate a good site for this trap. A stream bank or small hillside works well. Drive a wooden stake into the bank, wiggle it around, and pull it out. This makes a hole in the dirt that resembles a rodent hole. Insert bait deep into the hole. It's OK if you leave a little fresh loose dirt at the mouth of the hole – this makes it look "lived in."

**Step 2:** Dig a shallow hole, large enough to hold the open jaws of the foothold trap, near the fake rodent hole. Drive a stake into the ground and attach the foothold chain to it. Place a piece of wax paper over the set foothold trap. This keeps the cover dirt from filling in the space under the foothold trigger. Cover lightly with dirt or sand. The ideal distance from the fake rodent hole to the foothold is the same distance from the target species' nose to its front feet, and slightly right or left of center.

**Step 3:** Set up a fence or funnel. Place rocks, logs, thorny branches, or other natural obstructions near the foothold, but not over it. This will help to persuade the animal to step in the right spot. Check your trap daily and dispatch any trapped game.



## Conclusion

Trapping is just like any other survival skill. The more you practice it, the better you'll get. And you can even get in some practice time in the city and suburbs. Set traps without their harmful component.

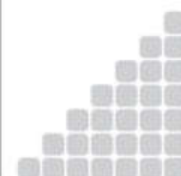
For example, create a foothold set without burying the foothold. Just create a patch of damp sand, a baited fake rodent hole, and set up obstructions to direct the animal to set in the "track trap" to catch only their footprint. You could also set up snares with thread instead of cables or rope. Wipe a little sticky

pine pitch on the tread and see what happens. If an animal gets caught, the thread will break. This shows you that your trap could have worked, and the sticky sap may give you a hair or two so you can see which species tripped the trap.

Practice your trapping often, and that skill will always be there to serve you. 🍷

## SOURCES

Hunting & Gathering Survival Manual > [www.amazon.com](http://www.amazon.com)  
National Trappers Association > [www.nationaltrappers.com](http://www.nationaltrappers.com)  
PCS Outdoors > [www.PCSoutdoors.com](http://www.PCSoutdoors.com)

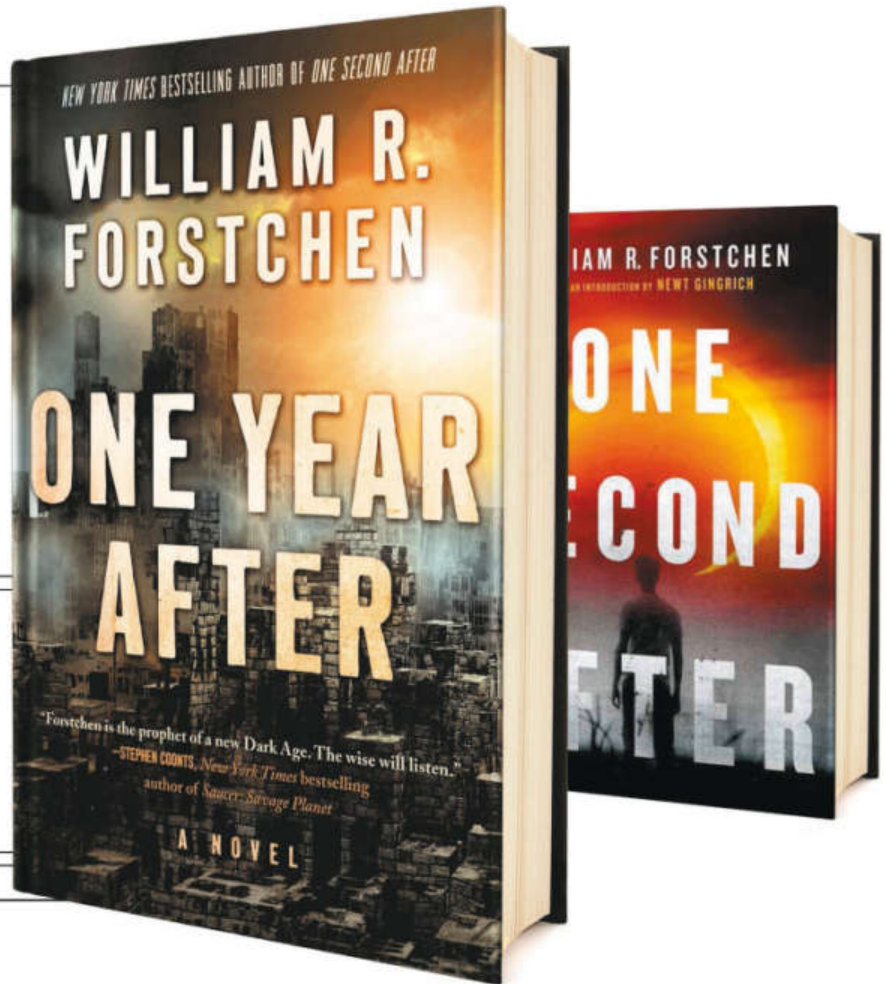




# THE FUTURE'S STONE AGE

Author and Historian William R. Forstchen Chats About the Sequel to His Best-Selling Novel *One Second After* and Why Our Government Should Fear an EMP Attack

Story by Jim Cobb



In 2009, Dr. William R. Forstchen's *One Second After* took the world by storm. Equal parts thriller and cautionary tale, it was cited on the floor of Congress as a book all Americans should read. For those who somehow missed it, the book examines the aftermath of an EMP (electromagnetic pulse) weapon being detonated in the United States. In literally one second, virtually all electronics are rendered useless.

In the novel, John Matherson — a retired U.S. Army colonel and professor of history at Montreat College in North Carolina — reluctantly steps up to lead his community in the wake of this horrible disaster. *One Second After* realistically portrays both the good and the bad that would be associated with such a cataclysmic event. It became an instant classic in the prepper world.

The long-awaited sequel, *One Year After*, recently hit book shelves and is available on all e-book platforms. Forstchen graciously took time out of his busy schedule to discuss the realities of an EMP attack, how his best-seller changed his life, and what we can expect from his latest work of fiction.

**OG:** Every author hopes their work finds an audience with whom it will resonate. When you were writing *One Second After*, did you have any inkling of just how popular it would become?

**William R. Forstchen:** No idea whatsoever! By the time I wrote *One*

*Second After*, I had published over 40 books, mainly in the field of science fiction. But after completing graduate school with a Ph.D. in history in 1994, I was shifting more into history, and military history. I had reached a comfortable level as an author but — other than the books I had coauthored with Newt Gingrich — had never, with just my name on the cover, hit best-seller status.

I actually wrote the book before “taking it out” for publishers to look at. Around 10 or so publishing houses rejected it, until finally Tom Doherty at Tor/Forge took a second look and decided to go with it. So from the time I first started writing until the day it hit the book shelves was over five years. It was the shock of a lifetime when, two weeks after the book was released, my agent called with the news that we had just hit *New York Times* best-seller status and the book was off and running.

It has been about six years since *One Second After* was first published. In the time since, the book has been cited on the floor of Congress as well as used as a cautionary teaching tool across the country. Do you feel the United States has made any significant progress in terms of EMP hardening?

**WF:** This is definitely one of those “yes and no” type answers. My hope was that the book would arouse interest at the federal level for two major actions. The first to begin a serious effort to at least “harden” some



of our infrastructure from the threat of an EMP or CME (Coronal Mass Ejection) from the sun. Second to start, as was done back in the 1950s regarding nuclear war, a campaign of national preparedness, meaning public information, training of military and government personnel, and stockpiling of supplies. And third, to encourage a more robust foreign policy to prevent potential enemies willing to use nuclear weapons from obtaining those weapons.

The federal government has failed on all fronts. I am appalled by the lack of action in Congress and by an executive branch that has failed both with North Korea and Iran to make abundantly clear that even the remotest kind of threat will never be tolerated. America could and did recover from Pearl Harbor and Sept. 11 – recovery from an EMP strike is impossible. There will be no second chances.

The “yes” side of my answer? I have been amazed by the response of “we the people,” even while the federal government is moribund in its response. Millions of ordinary citizens are taking the threat seriously and preparing. I disdain how media tends to portray preppers. I have attended dozens of conferences since the book was published and have found the ever-growing prepper movement to be made of Americans who believe in self-reliance rather than wait for the government to do something first. I see them as the hope of the future.

From your perspective and research, what are one or two things you feel we as a country should be doing in terms of getting better prepared for an EMP threat?

**WF:** Every citizen should be prepared to provide for themselves and their family for up to a year after such an event. It is good common sense, which applies not just to an EMP, but also to a major solar storm, a Katrina-level hurricane, a serious financial collapse. Preparing is just plain old common sense.

On the federal level? If I could choose but one thing, it would be a robust foreign policy that made abundantly clear to Iran, North Korea, and their potential surrogates that we will not hesitate to strike first if we suspect a move toward hitting us with an EMP. An EMP is a first-strike weapon that, if used against us first, will be a blow this nation can never hope to recover from. The Congressional study of 2004 stated that the fatality rate would approach 90 percent after one year. We are not talking about 3,000 dead as witnessed on Sept. 11 and also on December 7th. A major EMP strike would be a near extinction level event for the United States, and our federal government has utterly failed to treat it with the seriousness required.

What was the impetus behind writing *One Second After*? Did research lead you to the story idea or was it the other way around?

**WF:** I was in Washington D.C. on the day the 2004 report on EMP was released and saw the complete non-reaction of the mainstream media and the rest of government. I later spoke with the chairman of that committee, Congressman Roscoe Bartlett, who lamented

# Everybody Loves a Good Story

Novels about the end of the world, or at least the end of the world as we know it, are especially popular amongst those who prepare for such things in real life. Not only do we enjoy reading about how folks fare after a major disaster, we can sometimes pick up new tricks and ideas to try ourselves. Many authors, such as William Forstchen, do extensive research as they craft their stories, working many real-world skills and bits of gear into the narrative.

Should you be in the mood for more world-altering destruction, here are a few suggestions:

## The *Ashfall* Series by Mike Mullin

Alex is a teenager looking forward to having the house to himself for the weekend. His family is headed out of state to visit relatives. Unfortunately, fate has other plans and instead of a relaxing few days playing video games, Alex's world comes crashing down. The Yellowstone caldera, essentially a giant underground volcano, erupts and within days the entire United States is in disarray. What wasn't immediately affected by the blast is covered in feet of ash. Alex decides to make his way to where his family was heading and strikes out on foot. As the story progresses through three novels and one novella, Alex comes of age in a world irreparably and forever changed.

## *Hatchet* by Gary Paulsen

A classic in every sense of the word, *Hatchet* has been thrilling readers for almost 30 years. Young Brian Robeson is flying to meet his father in Canada when his pilot suffers a fatal heart attack. After crash landing the plane in a remote lake, Brian is left on his own to find a way to survive in the wilderness. At his side is his only true survival tool, a hatchet his mother gifted him just prior to departing the airport. Brian spends almost two months in the wild, learning through trial and error how to survive. His adventures continue through another four books.

## *Pandemic* by Yvonne Ventresca

Lilianna is 16 years old when her world is turned upside down. Both of her parents have jobs that take them out of town, and it's during one of those times that a new flu strain crops up and begins sweeping the globe. Called the Blue Flu, because it chokes off the victim's air supply, it's deadly and very infectious. Lilianna is something of a closet prepper, but she's far from ready for a crisis like this. As society begins crumbling around her, she's forced to reach out for help. Eventually, she teams up with several other teens in town to scavenge supplies as well as try to locate more survivors.



## Novels (continued)

### ***The Rule of Three* by Eric Walters**

EMP is the culprit in this trilogy. Adam is in high school, helping a friend with his homework, when the lights go out. It doesn't take long for folks to realize this isn't a normal power outage as vehicles, cellphones, and other technology have also gone dark. Adam's father, a commercial pilot, was out of town when the EMP hit. His mother, a local police captain, helps organize the community for safety and security. Adam's next door neighbor, Herb, is a retired government worker who turns out to be far more than he seems. Over the course of three novels, Adam learns just what it takes to survive in this new world.

### ***The Weller* by Adam Whitlatch**

Some folks like wilderness survival stories, others are more interested in a community banding together sort of affair. For those who enjoyed the *Mad Max* movies, this one's for you. *The Weller* is full of gun battles being fought from muscle cars screaming through a desert wasteland. Matt Freeborn is the titular Weller, a person who can find water in a drought-stricken world. Time and again, though, it is his skill with a rather large firearm that keeps him alive.

### ***Wake-Up Call* by John D. McCann**

The author is a well-known authority on survival and self-reliance. In this book, McCann's first novel, he utilizes fiction as a teaching aid. Todd and his wife, Melissa, are a relatively average couple. Far from anything resembling preppers, they are wholly unprepared for a massive earthquake that strikes their hometown. Utilizing an approach of, "Here's an example of what not to do," McCann teaches the reader quite a bit about disaster readiness as the story goes along.

that the problem was that the issue of EMP lacked a constituency of voters who took the topic seriously. He then urged me to write a popular novel to try to get the word out. That was the original motivation, then fueled by the research the work required and the realization on my part of how vulnerable we are to this threat.

My inspiration came as well from some of the great classic cautionary tales of the 1950s and '60s, such as *Alas Babylon*, *Fail-Safe*, and the truly frightening *On the Beach*. Those books helped to awaken and move public opinion, and I owe an acknowledgement to those works.

**Without giving away any secrets, what is the basic storyline of *One Year After*?**

**WF:** [Smiling.] As the title implies, it picks up the storyline a year after the end of *One Second After*. It presents two plotlines, the first being how to start rebuilding infrastructure, and even more importantly, how does America start to rebuild itself as a nation. Do we do so from the top down under the aegis of a renewed federal government, or from the bottom up of local communities reuniting?

**Did you always plan to do a sequel to *One Second After*?**

**WF:** Definitely not! I resisted for quite a few years. It was a highly disturbing storyline. I use to joke with my daughter that someday I was going to write a book titled *Happy Bunny Goes to Town* — seriously I really did want to write a happy children's book! I did have the pleasure of writing a book in cooperation with NASA, *Pillar to the Sky*, which presented a positive vision of a renewed space program. But always I was being asked to do a sequel to *One Second After* and finally I could no longer say no. That and enough time had passed that even in my own mind I found myself mulling over just how we might rebuild and what political and military challenges would then be "out there."

**Your hero, John Matherson, is a history professor at Montreat College. You are a history professor at Montreat College. Is that as far as the similarities go between you and your protagonist?**

**WF:** We both teach at Montreat. I have one

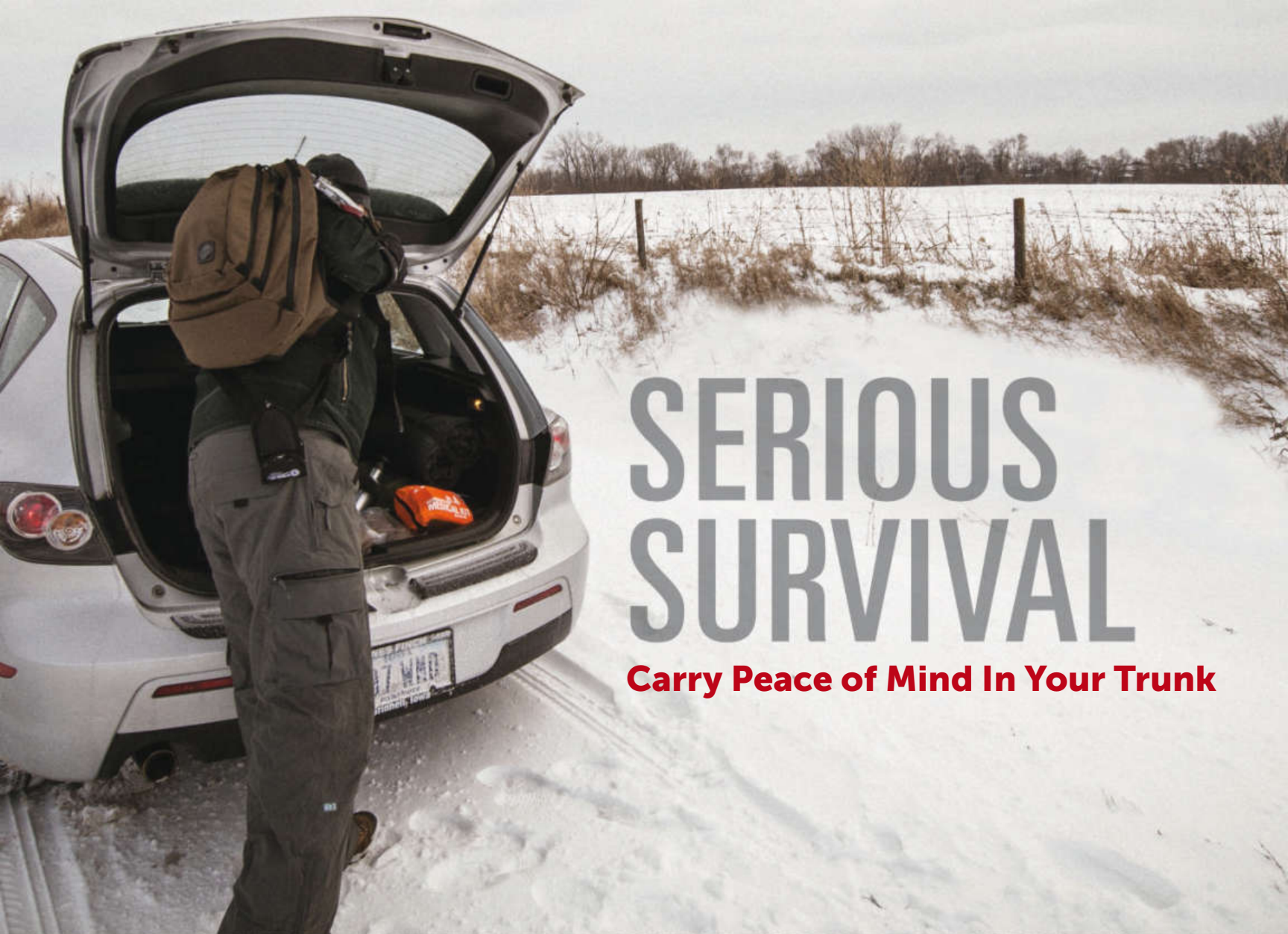
daughter who became something of a model for the two daughters, though a difference I thank God for is that my daughter's health is exceptional. But as to who John is, I modeled him after a dear friend, a retired WWII general who passed away just as I started to write the book, and several other veteran officers — men who, after the experience of war, sought to live lives of peace, but in a time of crisis could rise to the challenge. So many characters in the book are based on real friends and neighbors. I hope I did them justice because Black Mountain and Montreat, North Carolina, stand in my mind as the best of what America was, is, and will always be.

**Novelists often mention how their characters seem to have a life of their own. Did any of your characters end up doing something that surprised you or perhaps took the narrative in an unexpected direction?**

**WF:** There were moments of plot turns I had not anticipated. Two of the most difficult scenes to write actually involved John's dogs. I too owned Golden Retrievers and a Yellow Lab. When the moments came when the dogs played a major role, I had not anticipated writing about that aspect of post-EMP survival, but memory flashed of what happened during the sieges of Leningrad and Stalingrad in WWII. That was some very difficult moments to wade through, and since publication many readers have said those were the most difficult scenes to read in the book. Beyond that, part of the ease of writing the book was the fact that nearly all characters were based on people I know, and as the plot unfolded I simply had to write down how I would see them reacting.

**Anything else you'd like to share?**

**WF:** I still want to hope that not just my book, but others on the subject that have come out since my publication in 2009 will finally stir public reaction to demand a comprehensive and aggressive response by the federal government. I hope that protection and preparedness for an EMP or CME will actually be a serious issue in the 2016 elections. A presidential candidate, on either side, who states preparedness is one of their top priorities will most certainly have my attention. ■■



# SERIOUS SURVIVAL

**Carry Peace of Mind In Your Trunk**



Ultimate Car Kit  
**\$224.99**  
Item #080-001-160



Winter Upgrade Kit  
**\$21.99**  
Item #080-001-162

## ESG Essentials Ultimate Car Kit

A road emergency can leave you stranded in the middle of nowhere, in bad weather, with help far away. Our kit is packed with critical supplies to sustain you until help arrives:

- First aid kit, flashlight, batteries, emergency blanket & folding shovel
- Plus, glow sticks, fire starters, rescue mirror & compact multi-tool
- Comes in a sturdy nylon pack – stow it and forget it, until you need it
- Add-On Winter Upgrade Kit has reusable hand warmers, wool blanket, ice scraper & a versatile shemagh scarf

 **BROWNELLS.**  
**EMERGENCY & SURVIVAL GEAR**  
PREPARE. EQUIP. SURVIVE.  
**BROWNELLS.COM/ESG • 800-741-0015**





# FIREWOOD

## FUNDAMENTALS

### How to Baton Wood With a Knife

Story by Tim MacWelch

**A**rmchair preppers seem to think that splitting firewood (and every other skill) is pretty easy in a survival situation. It must be – those survival guys on TV make it look so quick and easy, and they probably didn't even go to college. But when the harsh reality sets in, and these watchers try to become doers, they

find that cutting wood is like every other worthy activity in life – there's some skill involved and practice required.

These soft-palmed TV addicts might not even be able to chop a little piece of wood in two with their expensive survival knives. And this is the point where they realize that they don't know the right technique. If they only knew how to use a baton ...

#### **WARNING!**

This is not meant to be an exhaustive guide to cutting wood. Using blades of any kind, especially in conjunction with a baton, can be dangerous. Seek a professional guide or a reputable instructor for more information.



# LIGHT UP THE NIGHT

Find your perfect flashlight from hundreds of premium models.



USE COUPON **OFFGRID** FOR 10% OFF

FREE US SHIPPING OVER \$49

**FLASHLIGHTS • CAMPING • KNIVES • SURVIVAL**

GOINGGEAR.COM 770.435.4103 1302 CONCORD RD, SMYRNA GA





# Best Blades

By far, the best knife for baton work is a large, fixed-blade knife with a full tang, square spine, and beefy handle scales. A tool like that is built for abuse, and if beating your knife with a hardwood baton isn't abuse — we don't know what is. The average survival knife should meet most or all of these criteria.

But as your knife starts to deviate from the baton-knife formula, the chances of damaging the tool increase. If the knife isn't a fixed blade, you run the risk of breaking the pin that allows it to be a folding blade. If the blade metal doesn't fill up the handle area (full tang), you may separate the blade from the handle by beating it. If the handle is wimpy, or the spine is sharp (like a double-edged dagger), it just won't perform well when batoning. Use a beast of a knife for baton work, or go buy a hatchet. Keep your pocket knife in your pocket.

## What Is Baton Work?

Wood batoning is the act of splitting or carving wood using a knife and a wooden baton to tap the back of the blade, thus driving it through the wood you mean to shape or split. The physics involved is similar to hatchet wielding. There's a sharp cutting edge and some weight behind it. But the difference lies in the fact that the weight and the edge come from two separate objects.

By placing the blade exactly where you want it, you have far more control over the splitting and cutting process than if you just swung a hatchet or machete at the "target." You can use your folding pocket knife or, better yet, your fixed blade to split kindling out of logs, branches, pallets, or furniture. You can also use this technique to make slats, notches, and other shapes in pieces of wood to build tools, traps, weapons, and many other items in a post-disaster scenario.

Learn how to baton, and you'll finally have proof that size doesn't matter, all that matters is how you use it.

## Get Started

The basic technique is so simple that we could have put this article together without words — just a few pictures. But since we know many of you are the thorough kind, we put some together some explanations.

**Step 1 (Safety Check):** I've had bark chips and bits of wood in my eyes before, and I don't recommend it. And I've had more splinters in my hands than a blind guy stumbling through a toothpick factory — not fun either. You'll want to wear gloves and some kind of eye protection while splitting wood, just to stay on the safe side. It's also very helpful to have a large log, tree stump, or some other surface to act as a "workbench" or "chopping block." It should provide a stable platform to set up the item you intend to cut or split.



**Step 2 (Pick Your Tool):** The baton should be an appropriately sized piece of hardwood. For large splitting jobs with a big knife, you'll want a baton a little smaller than a baseball bat. For small tasks with small knives, a little 1-pound wooden club will work fine. It should be hardwood and dry. Wet wood will be softer (even if it's hardwood), and the spine of the knife will dig into it excessively upon impact.

**Step 3 (Get To Work):** Once you're ready, start hammering the knife down through the wood by tapping the blade's spine. If the knife is really long, you'll have plenty of spine to hit. Consequently, it gets a little dicey when using knives



# EVOLUTION IS A THING OF BEAUTY



The new S1 Baton is the latest evolution of our most popular Baton series. At less than 2.5 inches, and just over one ounce, the S1 Baton fits easily in your pocket, making it perfect for everyday carry. But don't be fooled, while the S1 Baton is small, its TIR-focused output is a mighty 500 lumens whose beam reaches 360 feet. And it has plenty of features to be the most useful light you can own, like its magnetic tailcap, variable light settings, and automatic timer shutoff. The S1 Baton is the next step in flashlight evolution and it is beautiful.



[www.oightworld.com](http://www.oightworld.com)



# Non-Fire Uses

You could use a baton technique to create shingles from blocks of wood, but kindling and shingles aren't the only things your knife and baton can create. Some careful baton work can shave down a staff of flexible hardwood to create a self-bow or a crossbow prod. Careful shaving and some knowledge of bow-making and tillering are required for best results, but anybody can try it. You could also use a knife and baton to create tent stakes, boards for friction fire sets, trap parts, stabbing weapons, spits, sticks for primitive cooking techniques, camp furniture, and a wide range of other useful items. You can even use the technique to cut rope and vines by setting them on a log as a chopping block.

that are too short. Hammer the knife spine until you've finished the cut or split — or you need to stop and adjust the blade. Knife adjustment is common and will happen often in baton work. Just be careful as you pry the stuck knife from the piece of wood that it's stuck in; this is the maneuver in batoning with the highest risk of injury.



**Step 4 (Repeat As Needed):** This process can be used over and over to reduce logs into splinters and to perform elaborate carvings. In colonial times, house shingles were even made with this technique, using a heavy baton and a special large blade with an angled handle called a froe. But since you don't need to make a lot of shingles in an urban survival setting, let's talk about more practical uses for this technique.

## Baton Your Way to Glory!

Let's say a storm knocked out your power, and you need a fire to boil your water and cook food. To confound your situation further, the closest thing to firewood you have are a few pallets you found behind a neighborhood store and some ugly furniture you've always wanted gone. With a little nail pulling and unscrewing, the pallets and hideous chairs will come apart, but they won't exactly fit in your apartment's fireplace or the balcony hamburger grill.

Enter the baton and knife. Using a chair leg for your baton, the chair seat as your "chopping block," and your favorite survival knife, you can proceed to split the pieces of lumber and chair parts in half. Once split in two, these more slender pieces are even easier to split again and again. Soon enough, you have a wonderful pile of split wood.

And if these split sticks are too long, use the knife and baton to partially chop them and then break them to shorter lengths. Light up the smallest wood splinters first, then add slightly larger split pieces until your fire is established.

## Conclusion

With the simple technique of using a baton, it's easy to make a small knife act like a large knife. This means that we don't have to carry as much weight in tools to get the tasks of survival accomplished. It also means that we stay safer. There's a lot less that can go wrong when splitting or carving with a baton, compared to swinging a machete or hatchet around.

It's even easier to stay under the radar with the smaller blade during a crisis event. Imagine trying to smuggle a machete through a police checkpoint during a crisis situation. Or perhaps you're trying to stay low-profile as you work your way home from the office after a blackout engulfs your community. Then imagine how much easier it would be to walk around with a fixed-blade knife in your boot or bag, without raising so much as an eyebrow.

Being able to baton wood lets you work smarter, not harder. And at the end of it all, isn't that the way we should approach all survival skills? ■■





# THERE'S A STORM COMING

BE PREPARED WHEN THE STORM HITS



INSULATED

3M™ THINSULATE™

WATERPROOF



## FASTFIT® INSULATED

A comfortable layer of fleece lines the entire glove

## ORIGINAL® INSULATED

A comfortable layer of fleece lines the entire glove

## WIND RESISTANT

C40 3M™ Thinsulate™ traps warm air to help regulate your body temperature

40g 3M Thinsulate

## WINTER IMPACT

Accordion knuckle guard with EVA foam padding extends to the index and middle finger

40g 3M Thinsulate

## WINTER IMPACT PRO

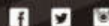
Rugged Armortex® knuckle guard conceals 5mm EVA foam padding

40g 3M Thinsulate

**COLD WEATHER HAND PROTECTION**

US: 800.222.4296 | WWW.MECHANIX.COM

#mechanix







# SURVIVE, EVADE, RESIST & ESCAPE

Lessons Learned From Our Industry  
Exclusive Invite to 88 Tactical's Intense  
(But Fun) SERE Class

Story and Photos by Nathan Murr

**T**he little voice in the back of your mind has always worried that this day would come, and it finally has. As you glance back at the city skyline burning in your wake, you hear the gunshots, blood-curdling screams, and smashing of glass. You wonder nervously if your family is safe, as you egress from this dying metropolis. All the gear and food you've stored, all the hours spent training and improving, and here you are — hundreds of miles away from your hometown and your family, on a business trip with a group of people you barely know.

You pass an abandoned police car, painfully glancing inside at the empty rifle rack. The sounds of gunfire grow closer, and your group picks up the pace. People are going feral, primitive. The menacing armed men you spied back there seem to be done with their current victims, and now they're hunting the people in tailored suits and \$500 loafers who seem utterly defenseless: you and your colleagues.

OK, so this scenario is fictional. But it's not entirely unrealistic. Whether it's caused by civil unrest, a terrorist attack, an invading foreign army, or a natural disaster, society can go sideways really fast. That's why we jumped when we got an industry-exclusive invite to participate in 88 Tactical's SERE (survive, evade, resist, and escape) Level 1 Course. Based in Nebraska, this elite training organization provides instruction to civilians, law enforcement, and military personnel on a whole range of survival knowledge, from women's self-defense and carrying a concealed weapon to bushcraft and tactical medicine. The two-day class made us feel that, should the aforementioned human-prey situation strike, we could not only survive it, but also make it home in one piece.

So, we've absorbed the loads of information, tactics, and experience from the 88 Tactical class and distilled it here, into the top five lessons learned. Read on to find out.

## LESSON 1

### You Are Only as Strong as Your Team

In the corporate world, there are good leaders and there are bad leaders. The difference is that during a crisis or in a post-crisis world, the latter could get you killed — whether through negligence or straight incompetence. So it goes without saying that it's vitally important that you pick the right member to assume the role. It's wise to avoid those who are overeager to take the helm, and odds are the best pick will be the member who's already universally respected. This person will need to keep everyone on track, issue responsibilities and tasks, and hold everyone accountable for their actions.

That's why the assigning of leaders is one of the first tasks 88 Tactical gives to students in its SERE class, and it will affect the remainder of the training. This decision falls on the group to pick the alpha dog. But that doesn't necessarily mean that



he or she has to be a tyrant. If a leader's style is too heavy handed, members of the group might mutiny or fracture off on their own. Many collective decisions and plans can be made in an open forum, with all contributing to the subject. This is a smart way to make everyone feel appreciated and part of the new family. It also results in a stronger plan, one which everyone believes and is invested in. However, in the end, it should be the appointed leader who assigns tasks and has the final say. This is the burden of leadership, and they will be held accountable for their actions the same as the rest of your group.

As in the military, or in certain sports, it's all about "the team." It becomes your own micro-culture, with an evolving set of unique customs and values. It has been said that as humans, our values are shaped by our environment. When a person is exposed to a new environment, their values change accordingly to that setting. If your Prius-and-Frappuccino world has turned into the end of the days, expect your perspective on things to change. They'll change to coincide with those of your entire group, or you'll leave. Group absolution is a timeless aspect of being human, so don't be surprised when you realize how primitive things become.

## LESSON 2

### Sleep Is a Luxury...That'll Get You Killed

You aren't going to sleep, and if you do it's going to get you killed. This is a fact that many soldiers already know, but it's an important lesson that runs the entire length of the 88 Tactical course. In a survival situation, it's likely that you'll end up on foot, otherwise you would simply drive yourself out of danger in the first place. All the energy expended hiking will leave you spent at the end of the day, but that doesn't mean you get to punch out when the sun sets.

Who would you follow into a dark abandoned building on a desperate scavenging run? Picking the leader of your survival group is more than just voting for the loudest, strongest, or smartest person. It's choosing someone who knows when to deliberate, when to delegate, and when to take action.







Historically, many armies have attacked at night or close to dawn. This hasn't changed, as some of America's top commandos continue to use this proven tactic to gain an upper hand.

You will need to have your group post a nightlong watch, which rotates so everyone gets some rest. Maintaining security at all times is critical. Having a nice big tent and comfy sleeping bag seems nice, but kicking your boots off and crawling into the bag is a great way to get your throat slit in your slumber. If there are men actively hunting you who wish to visit harm upon you, why would you switch off your defenses as darkness descends? You simply cannot, and having your lookout fall asleep while on watch can be a death sentence to the entire group.

The cadre at 88 Tactical teaches their students how to construct simple, effective shelters that can be erected and torn down in a few minutes. The use of tarp shelters allows for a lightweight, versatile, and effective means of making camp. In an emergency, they can be cut down and stowed on the run or abandoned completely.



▲ The 88 Tactical SERE class simulates a raid on our camp.

➤ Attempting to rescue a "friend" via water.

◀ When you're on the run, a tarp is an effective shelter that's lightweight, quick to assemble, and expendable if need be.

## LESSON 3

### Good Guys Get Hurt, Too

We all want to smite the bad guys and bring them a little payback. However tempting this might be, avoiding conflict is your best bet. Tangling with mixed bands of looters, marauders, and violent gangs is how you'll lose people in your group.

When someone gets hurt, where will you take them? When there are no more ambulances, hospitals, or doctors to be found, you'll be limited to what's in your medical bag or first-aid kit. Fighting for resources or in self-defense will



likely result in severe trauma, which might be otherwise survivable in times of normalcy. But without modern medicine, many injuries will likely prove fatal here in the "after." That's not to say that primitive medicine can't work if you have the knowledge and supplies, but we all want to avoid Civil-War-era medicine at all costs. Having a med kit, and knowing how to use it, is as important as having a firearm.

You have to understand that bad things can happen to everyone, and that needs to be planned for. A careless slip of a knife in camp, a bad fall down a ravine, or a gunshot

wound to the thigh can threaten your life instantly. The medical aspect of the SERE course is one of the most important lessons many of the students walk away with. Paired with the firearms portion of the class, this is often the first exposure many have to administering care under fire and handling triage.



## LESSON 4

### A Good Plan Today is Better Than a Perfect Plan Tomorrow

Indecision, arguing, or simple lack of action will anchor you and your team when things need to be moving along. Sitting around the camp talking about getting food doesn't actually put it in your belly, but not discussing the plan in full detail so all members understand it is foolish. Rushing into a situation can get you killed, but so can avoiding all risk. Everything you do, or fail to do, can get you killed.

But by making well thought-out decisions, this risk can be mitigated significantly. This is where your good leaders will excel, and individual skills will shine. (See lesson 1.)

Remember that all your teammates have skillsets that are unique to their old jobs and lifestyles, and this is a huge advantage to the group. If you have a mechanical engineer in your ranks, have him take the lead on building a protective structure or rope bridge. If you have an ER nurse, he will have insight on building a medical plan that others will not. Lastly, just because a guy hangs drywall for a living now doesn't mean he forgot everything he learned during his yearlong deployment to Afghanistan in the National Guard.

Take all of this in, share perspectives, and formulate good, simple, and easy-to-execute plans. Make your subject-matter experts the "project managers" of their specialty. Use this knowledge and experience to the fullest advantage, and incorporate it into all of your plans.

< Everyone in your survival group needs to understand the plan – and what to do when it goes south.

> Not for the faint of heart: Students at 88 Tactical's SERE class get to experience what it's like to get captured and detained.

## LESSON 5

### Plan For Your Plan to Not Work

Speaking of plans, there is one lesson you are guaranteed to learn at the 88 Tactical's SERE class that will resound for the rest of your life. It's a universal truth that many simply refuse to acknowledge: A plan is just a list of things that aren't going to happen.

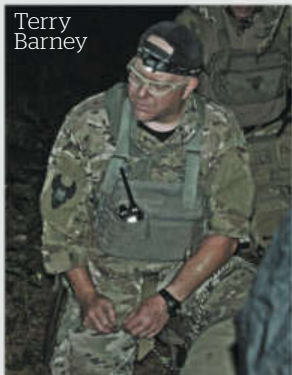
People are creatures of habit. We like clear-cut plans, schedules, and routines. Without the safety of this structure, people will lose faith in society extremely fast. Disorder and chaos won't be far behind. The ability to think, problem solve, and act under pressure are important – and equally hard to teach. As Darwin showed us, adaptation to whatever is thrown at you will likely be the key to your survival. Fortunately for us, our ancestors knew how to adapt. After all, we're still walking the earth.

Understand that things are not going to go as planned, but that doesn't mean you shouldn't take the time to craft them, or create your own order. If you lose a member of your group to a kidnapping, what will you do? If it was a particularly unpopular member of the group, well that's one thing...but what if it's the most loved and trusted? The resolve of the team should require your group to do the best they can to recover him. Maybe the new strategy is to trade supplies with the captors and use verbal jiu-jitsu. Or maybe an early morning





Terry Barney



# The Mentor

As a law-enforcement vet with more than 14 years of experience, Shea Degan founded 88 Tactical in 2010 after seeing a need for highly adaptive training courses taught by experts with real-life experience using the latest technology on state-of-the-art facilities.

In a short five years or so, Degan's attracted an impressive and diverse collection of instructors, from current Army Special Forces to former Navy SEALs. He and his team believe in having the right person for the right job, and for this reason the SERE Level 1 Course has many skills being taught by Terry Barney. He's an accomplished SERE and bushcraft instructor, with his experience dating back to his days in the military. A former U.S. Air Force survival instructor, Terry Barney taught hundreds of DOD personnel before moving on to do the same in the private sector with 88 Tactical. His love of the outdoors led him to become a respected backcountry guide with both pack and paddle, as well as volunteer his time as winter camping instructor for the Boy Scouts of America.

Barney has spent decades honing his diverse skillsets, and his knowledge and humorous approach to teaching made him a favorite of many who attended the course we took. His big brother/mentor approach to instruction brings a humble vibe to a man who has mastered high angle rope rescue, rescue diving, emergency medicine as a paramedic, and a whole slew of other dirty, dangerous jobs.

In 2010, Barney opened the Midwest School of Bushcraft. He has traveled to many parts of the country and has trained hundreds of people. He has a popular YouTube channel (under the username "IA Woodsman") and is an integral part of 88 Tactical's instructor cadre.

➔ [www.88tactical.com](http://www.88tactical.com)

➔ [www.youtube.com/user/iawoodsman](http://www.youtube.com/user/iawoodsman)

surprise raid is the best option. You might not know until it happens, and the plan will have to be changed on the move.

Once you come to terms with this, it will only help you. You need to learn to be as fluid as water and as hard as rock.



## Conclusion

The best tool you can give yourself for a crisis is knowledge, and that's exactly what the 88 Tactical's SERE Level 1 Course can give you. You earn this knowledge through a series of challenging tasks and missions, and because they are earned through difficulty, they'll likely stick in your memory for years to come.

The class is set up to challenge the students mentally and physically, just as a real-life scenario would. The difference is that by attending courses such as this you can actually learn in a relatively safe environment some very important skills, such as bushcraft, rope work, small-unit tactics, and team building. Don't be surprised if you walk away with a few new lifelong friends from attending the class. It's an amazingly empowering thing to do things you never thought you could, while being forged into a solid, cohesive team of trusted friends.

When the unthinkable happens, no one rises to the occasion – you are reduced to your level of training and preparedness. Similarly, a crisis doesn't make heroes or cowards of people; it simply reveals their true nature. The more a person refines their character and skill ahead of time, the more likely they are to survive. ■

# F\*ck the Ruck

especially when rucking the wooded hills of Nebraska. Many students will bring 40 pounds or more of kit to the course, most of which remains dead weight that the instructors will happily let you carry. So, what do you need to be successful in a changing environment of urban chaos to wooded danger? Check out the list below for a starting point:

You know that go-bag you've meticulously stuffed full of expensive gear? Leave it at home. Sometimes less is more,

- A reliable fixed-blade knife or robust folder
- Firesteel, the bigger the better. Leave the garbage magnesium-bar types alone.
- Footwear you'd want to wear for the rest of your life, over different terrains and through different climates
- A good-quality, mid-sized individual tarp made of nylon
- As much 550 parachute cord as

- you can carry
- A metal water vessel you can boil water in, such as the Heavy Cover canteen
- A poncho liner or blanket for cold nights and shelter
- Pair of good gloves. They don't have to be fancy – even leather farm gloves work great.
- Gore-Tex jacket and warming layers, including a spare set of socks



IT DOESN'T MATTER WHICH  
**PREDATOR**  
YOU HUNT.

WE MAKE  
**DARKNESS**  
YOUR ALLY.



© COPYRIGHT 2015, TNVC, ALL RIGHTS RESERVED  
IMAGE BY HIGHWAY PHOTOGRAPHY

[WWW.TNVC.COM](http://WWW.TNVC.COM)





# HOME ON WHEELS

## Can Conventional RVs Work in a Bug-Out Scenario?

Story by Patrick McCarthy  
Photos Courtesy of the  
Manufacturers



What makes a truly great survival vehicle? If someone asked you this question, you might reply with qualities like a powerful engine, high ground clearance, a huge payload of supplies, bright auxiliary lights, winches, push bars, and possibly even armor plating. Although we can certainly agree that all these features could come in handy, they also have a tendency to make the vehicle in question conspicuous — and in a survival scenario, that's the last thing you want to be. If your ride's appearance screams, "I'm prepared for anything," sooner or later someone less prepared will try to take it from you.

That said, consider a mobile survival platform that's common enough to blend in, spacious enough to be comfortable, and tough enough to use for years without repairs. Fortunately, there's a type of vehicle that's readily available and meets all these criteria — the recreational vehicle, or RV.

An RV will never be as stealthy as a motorcycle, or as capable off-road as a Jeep, but these homes-on-wheels are easy to find just about anywhere. Their living quarters provide plenty of room for gear and supplies, and best of all, anyone behind the wheel will end up looking more like a retiree on vacation than a hardened survival expert.

So, don't discount that old motorhome in grandma's driveway just yet — it can be a real asset if you need to bug out.

A recreational vehicle is simply a motor vehicle with an attached living space. A wide range of vehicles can be considered RVs, from massive tour-bus-sized motor coaches to tiny pop-up trailers. There are three main categories of RV: motorhomes, trailers, and campers. Each class of RV has its own pros and cons to consider, so read on to determine which best fits your needs.





# MEGA ARMS WEDGE LOCK

## AR-15 Hand Guard

Made from 7075-T6 extruded aluminum

Ultra strong and lightweight

Titanium barrel nut

Simple one screw fastening, black nitrided, wedge system (Patent Pending)

Compatible with any Mil-Spec upper

Available in M-LOK and KEYMOD

*MATEN/AR-10/308 version coming in winter 2015-16*



M-LOK & KeyMod



No timing required for barrel nut



Available in 7", 9", 12", 14" & 16" lengths

Titanium Barrel Nut



One screw lock up system



[www.MEGA-ARMS.com](http://www.MEGA-ARMS.com)

[FaceBook.com/MegaArms](https://www.facebook.com/MegaArms)

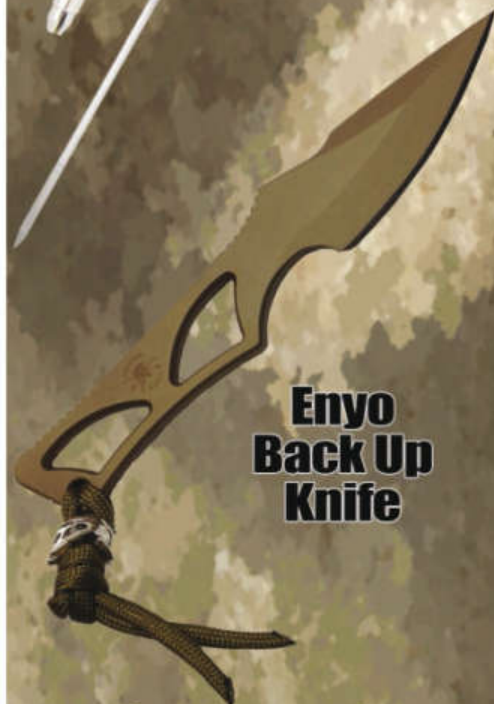
[Instagram.com/Mega\\_Arms](https://www.instagram.com/Mega_Arms)

100% made in USA 

## Covert Defense Gear



Inner  
City  
Defense  
Pencil



Enyo  
Back Up  
Knife

# U.S. Tactical Supply™

[www.ustacticalsupply.com](http://www.ustacticalsupply.com)

541-928-8645

939 Pacific Blvd SE  
Albany, Oregon 97321



## TYPE 1: Motorhomes

The first and most common type of RV is the motorhome. These vehicles are characterized by the powertrain and living quarters integrated together into a single package. Many motorhomes simply replace the rear section of a truck or van's body with living quarters, retaining the original chassis, engine, and driving position. These vehicles are known as Class C or midsize motorhomes, and can be identified by an extended section over the cab that often contains a bed.

> The Winnebago View: Note the extended sleeping area directly above the vehicle's cab; this identifies a Class-C motorhome.



The second category of motorhomes is the smallest, known as Class B (also called camper vans or conversion vans). These vehicles don't feature an extended section over the cab, resulting in a lower-profile roof. Often, Class-B motorhomes are based on passenger vans, like the Mercedes-Benz Sprinter, Ford E-Series, or Chevrolet Express. The biggest upside to this design is its appearance — some Class-B motorhomes aren't easily recognizable as RVs, and therefore avoid unwanted attention in a survival scenario.

Finally, Class-A "integrated" motorhomes are built from the ground up, with driving position inside the living area. These mega-motorhomes are typically larger, feature a vertical windshield, and appear more similar to a commercial bus than to a passenger car. Features can include washer/dryer

sets, expandable rooms, and even underside storage compartments for motorcycles or ATVs. As cool as that sounds, due to their cumbersome nature and noticeable appearance, Class-A motorhomes are better suited to transporting rock stars and celebrities than surviving the apocalypse. If you're behind the wheel of one of these giants, most onlookers will assume it has lots of desirable resources inside, and that's not a good thing in a dangerous situation.

^ The Winnebago Era, a Class-B motorhome based on a Mercedes Sprinter van. Notice the low-profile roof and lack of sleeping area above the cab.





▲ The Winnebago Grand Tour: Class-A motorhomes are the largest and most luxurious money can buy, and often feature amenities similar to a high-end hotel room.



From a cost standpoint, motorhomes run the gamut from tens of thousands to several million dollars. In a survival scenario, keeping a low profile is more important than having a fancy built-in jacuzzi or movie theater, so it's probably wise to avoid the more luxurious and expensive models. In addition, large Class-A motorhomes will be more difficult to maneuver and much more conspicuous on the road, so we recommend sticking to the smaller Class B and C motorhomes when SHTF.



▲ Here's the interior of the Winnebago Grand Tour. This palace on wheels will make you forget you ever evacuated your neighborhood...but it might not be the most practical for long-term survival.

#### PROS:

- › The most common form of RV
- › Spacious and luxurious with many available amenities
- › Wide variety of sizes and configurations to choose from
- › Moves under its own power, just hop in and hit the gas

#### CONS:

- › The most expensive form of RV
- › Larger models can draw unwanted attention and be difficult to maneuver
- › May require specialty parts for repairs; most require diesel fuel
- › Usually two-wheel drive with poor off-road performance (with the exception of expedition vehicles)



## TYPE 2: Trailers



▲ Trailers are highly versatile and provide many options, such as the vehicle storage space of this Jayco Octane toy hauler.

The second type of RV is the travel trailer or caravan. Just as the name implies, travel trailers are living quarters that attach to a car or truck via a tow hitch, and can only move when towed. These are the oldest form of RV, dating back to the 1920s, and are relatively mechanically simple due to their dependence on a tow vehicle.

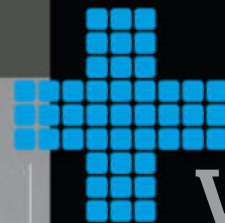
Travel trailers can be much smaller than a compact car, nearly as big as a city bus, or anywhere in between. Smaller trailers can be towed by an ordinary car, while the larger 30- to 40-foot trailers may require a purpose-built tow rig. For the purposes of survival, small and mid-size trailers shorter than 25 feet in length are ideal, as they can be towed by common pickups and SUVs.

Within the trailer category, there are several sub-groups to be aware of. Pop-ups, or expandable trailers, are handy for survival due to their low profile on the road and abundance of space when parked. Teardrops are small, aerodynamic, and lightweight (some can even be towed by a motorcycle). Toy haulers feature a fold-down rear ramp and storage space for ATVs or motorcycles. Finally, fifth-wheel trailers attach to an in-bed hitch (much like that of a semi



▲ The Jayco Jay Series Sport, a compact pop-up trailer that also features pop-out expandable sleeping areas.





# Expedition Vehicles

## Taking the Path Less Traveled

Aside from the three classes of motorhomes listed in the main story, there's an important sub-group to be aware of: expedition vehicles, or off-road motorhomes. These vehicles are designed specifically with extreme conditions in mind, and often have heavy-duty suspensions, large tires, four-wheel drive, and other off-road-oriented upgrades. If you need to go just about anywhere, be totally self-reliant, and truly prepare for the worst, you'll want one of these monsters.

Expedition vehicles can fall into any of the above classes, and range from simple living quarters placed on the back of a lifted pickup truck to purpose-built behemoths with six- or eight-wheel drive. However, given this article's premise of staying inconspicuous, expedition vehicles may not necessarily be a wise choice. First of all, they tend to be much more expensive than a traditional motorhome and typically must be special-ordered from the manufacturer, so they're not easy to obtain. Secondly, they're definitely going to draw more attention than an ordinary motorhome as you roar down the road on huge mud tires.

So, in a bug-out scenario where you're heading into isolated wilderness for an extended period, an expedition vehicle would be ideal. However, in a situation where you may need to frequently use public roads or leave your vehicle exposed to gather supplies, these vehicles may cause more problems than they solve.



truck) instead of a bumper hitch, resulting in improved on-road stability. However, fifth-wheel trailers are often larger and require specialized tow vehicles, so they may be less than ideal for survival.

The biggest advantage of a trailer is its ability to be disconnected from the tow vehicle. This enables establishing a home base far away from prying eyes, leaving the area in your vehicle to go on supply runs, and returning to your living quarters unnoticed. It's wise not to put all your eggs in one basket, and travel trailers make this easier than it would be in any other type of RV.

### PROS:

- › Can be easily disconnected from your vehicle
- › Small, lightweight trailers provide excellent mobility
- › Can be towed by a variety of cars, trucks, and vans
- › More capable off-road than most motorhomes

### CONS:

- › Typically less luxurious and spacious than motorhomes
- › Harder to move than motorhomes; requires a tow vehicle with a hitch
- › May be difficult to maneuver for drivers with no towing experience
- › Not all trailers have bathrooms or running water; may require an external generator for electricity



## TYPE 3: Campers

The third type of RV is the camper. Also called slide-in, dismountable, or truck campers, these RVs are removable living quarters that sit inside the bed of an ordinary pickup truck. Campers benefit from the compact size of trailers, but feature even better mobility since they don't require towing experience — if you can drive a regular pickup truck, you can drive a truck with a camper. Like trailers, truck campers can also be removed from your vehicle temporarily, although it will take longer than simply unhitching a trailer. In order to dismount a truck camper, it must be jacked up using four corner jacks, then any turnbuckles or tie-downs must be disconnected before the truck can drive out from under the camper.

The type of camper you can use is typically determined by the type of truck you have access to. If you have a ½-ton short-bed truck with a gas engine, your options will be limited to smaller campers, but if you have a ¾- or 1-ton truck with a longbed and diesel engine, there will be many more choices available. Modern truck campers have most of the amenities of a comparable motorhome or trailer, including refrigerators, ovens, bathrooms, and showers. Some campers feature pop-up or expandable sections that provide extra space when parked and a lower profile on the road.

In a survival situation, an ordinary 4x4 diesel truck with a compact pop-up camper would be an excellent choice. This setup won't draw as much attention on the roads as other RVs, is highly capable off-road, and will provide more than enough space for two adults and their supplies. It won't be as spacious as a motorhome, or as modular as a trailer, but it's certainly a nice happy medium.

### PROS:

- ▶ Easy to transport and highly maneuverable
- ▶ Extremely capable off-road when paired with a 4x4 pickup
- ▶ Can be removed from your vehicle, but not as easily as a trailer
- ▶ Features like pop-up tops can create a low-visual profile, not much larger than a bed cap or shell

### CONS:

- ▶ Requires a pickup truck and must match the truck's bed length and weight capacity
- ▶ Less spacious than almost all motorhomes and most trailers
- ▶ Larger campers may require heavy-duty suspension and brake upgrades
- ▶ May be unavailable for small or light-duty trucks



▲ An example of a truck camper, the Palomino Backpack Edition. Note the four corner jacks, which are used to mount or dismount the camper from the truck



< A pop-up truck camper, the Palomino Real-Lite. The expandable top section provides enough height to stand, and additional space for sleeping quarters when raised.

## Conclusions

Given these three categories of RVs, you must choose what's best for your location and conditions. For example, a large Class-A motorhome might be fine in the flat, sparsely populated Nevada desert. However, it would be a terrible choice for the densely packed streets of New York or Chicago, where a compact car with a teardrop trailer might fare better. If you need to survive in the tough terrain of the Sierra Nevada mountains, an expedition vehicle or 4x4 truck with a slide-in camper would probably serve you best.

You must also take into consideration the number of occupants and quantity of supplies you'll be transporting. A small trailer or camper might serve one person well, but if you have a large family, look into motorhomes or large trailers. Regarding supplies, extra gear can be strapped to your vehicle's roof, stored in the vehicle's cabin, or packed creatively in the living area itself. Much like building a bug-out bag or in-home emergency supply cache, you need to decide a time frame to plan for, and pack supplies accordingly.

Consider this guide a primer on choosing an RV for survival – there's still plenty to learn before you actually bring one home. Some might say the common RV is too obvious a choice for a bug-out vehicle, but we'd say it's an obvious choice for a reason. Someday, one of these versatile vehicles might make your life on the road a whole lot easier. 🏠





# GET TO THE CHOPPA!

**WARNING!**

Using a machete is inherently dangerous. Don't attempt to recreate the images and techniques depicted here. For more, seek consultation or instruction from a reputable survival instructor or martial artist.

## Machetes Truly Are the Original Survival Multitools

Story and Photos by Michael Janich

**M**edia depictions of hardcore survival scenarios like to feature big knives — especially machetes and their brethren. From the zombie chopping of *The Walking Dead* to Denzel's well-choreographed limb-lopping in *The Book of Eli*, it seems that no good apocalypse is complete without a serious big blade.



All fiction aside, that's actually a pretty accurate statement. A good machete is an amazingly versatile implement that can effectively substitute for many other more mission-specific tools. When wielded with moderate skill, it's also an effective surrogate sword and a potent close-combat weapon. Think about it, no matter what type of survival situation you might imagine, the basic context is that something bad has happened that disrupts the normal operation of modern society. That disruption forces us to make do with more primitive technology for a while. Well, if you look at third-world countries that make do with more primitive technology all

the time, you'll find that most of them regard machetes as indispensable all-purpose tools and folks in those societies are pretty damned skilled with them. That should be a hint.

(For the record, when I refer to "machete," I use that as a term of convenience to represent any large, utilitarian chopping blade from any culture. If you prefer a *golok*, *barong*, *bolo*, or something similar, the same basic principles apply — with the possible exception of a thrust-worthy point.)

With this in mind, the following is a look at this bladed tool and its many uses (improvised and conventional) and how best to apply them in a real-world or SHTF scenario.

## Weed Whacker

My affinity for machetes began a few careers ago when I was working for the U.S. government trying to resolve the fates of American POW/MIAs in Vietnam and Laos. Much of our work involved humping through the bush looking for aircraft crash sites and alleged burial sites. I was issued a standard G.I. machete and quickly learned its value as a tool for clearing trails, cutting helicopter LZs (landing zones), and other forms of weed whacking.

Light enough to wield without fatigue, yet heavy enough that the mass of the blade did most of the work, it easily handled everything from light foliage to thick, over-your-head elephant grass.



## Axe

In a survival situation, you probably won't need to fell a redwood, but lopping branches or even taking down small saplings might make sense. For this kind of chopping, a machete is ideal, especially if you learn to vary the impact point of the edge. Typically the "sweet spot" for maximum energy transfer in a chop is about one-third of the way down from the blade's tip. Although this spot maximizes the power of the chop, it can also cause the blade to bind in thick material. Moving the impact point closer to your hand reduces sticking and increases control.

## Froe

A froe, also known as a shake axe, is an old-school woodwright's tool used for splitting wood. It's basically an L-shaped tool with a wooden handle and a straight steel blade mounted perpendicular to it. The outside edge of the blade was sharpened, so you can hold the handle vertically while you baton the blade into the wood. Once it's in, lever the handle down to cleanly split the wood.

The advantage of a froe over an axe is that it allows you to precisely place the blade's edge — something that's difficult to do with a ballistic chop. For detail work, this kind of control is ideal. To duplicate it with a machete, place the edge on the end grain of the wood to be split so the blade extends at least a few inches beyond it. Using a short branch as a baton, strike the spine of the blade near the tip to drive the blade into the wood. Once you've gone to the desired depth, twist the blade to split the wood. If necessary, you can fashion a notched stick or split handle to provide greater leverage when twisting the blade. (*Editor's note:* For more on wood batoning, see "Firewood Fundamentals" on page 40.)





## Hammer

On quality machetes, the blade is quite thick and its spine is flat. This makes the spine of the blade a great improvised hammer for driving stakes, cracking coconuts, and other focused striking. (Naturally, you'll want to be careful when you draw back the tool to deliver another strike, as the edge will be pointing toward you.)



## Drawknife

Another old-school woodworking tool is a drawknife, which is traditionally a single-edged blade about a foot long with handles on both ends. Gripped by both ends, it is drawn toward the user to shave a piece of wood.

The machete's wide blade makes it easy to grip with one hand on the handle and one wrapped over the spine of the blade (carefully avoiding the edge). Grippied like this, drawing the tool toward you naturally allows it to function as a drawknife. This style of use is great for removing bark, sharpening stakes, and similar tasks.

## Shovel

If your big blade has a broad tip, you can use it as an improvised entrenching tool for limited digging and grubbing. Grip it with both hands by the handle and the back of the blade and keep your fingers away from the sharp edge.



## Saw

Some machetes are available with sawteeth on the spine. While this makes them less comfortable to use as drawknives and entrenching tools, sawteeth can be useful for some specific tasks, like cutting notches for fireboards, traps, and bowstrings. Personally, I feel a blunt blade spine makes the tool more versatile, but the option is out there.



Traditional big blades come in many shapes and sizes. Some are specialized for certain tasks while others are more generic – and versatile.

# Bad-Ass Barongs

Two of my all-time favorite knives actually began life as aluminum trainers that I designed for practicing big-blade tactics. The first one was a custom barong trainer that I designed as one of the souvenir items for my 2005 Martial Blade Camp training event. Made by Edges 2, the trainers and the tactics I taught to go with them were very well received by my students at the camp. To thank me for that experience, one of my certified instructors, Michael Rigg, took up a collection from the students and approached Canadian custom knife-maker Brent Beshara to render the trainer design as a live blade. After Brent did a portion of the work, he realized that the heat treating was beyond the capabilities of his shop and enlisted the help of his mentor, Canadian mastersmith Wally Hayes. The resulting barong is an extraordinary, one-of-a-kind weapon and the only co-authored work made by Hayes and Beshara. Needless to say, it's one of my prized possessions.

In 2008, history repeated itself. Working with my good friend Steve Rollert (who is also an amazingly skilled martial artist and head bladesmith of Keen Edge Knives), I designed another barong trainer that was a variant of one of his outstanding stock designs. After the students at camp had a chance to experience big-blade training, my friend Marc Galli, now an associate instructor in my Martial Blade Concepts system, approached renowned custom knife-maker Bud Nealy to translate the trainer into live steel. To date, Nealy has made three of these barongs (one for me and two for Marc) and they are simply incredible.

- [www.beshknives.com](http://www.beshknives.com)
- [www.budnealyknifemaker.com](http://www.budnealyknifemaker.com)
- [www.hayesknives.com](http://www.hayesknives.com)
- [www.keenedgeknives.com](http://www.keenedgeknives.com)

The author's most prized big blades are two custom barongs he designed, shown here alongside their training versions. From left: the Edges 2 trainer and its live-blade counterpart, the Besh-Hayes Barong (a one-of-a-kind custom and the only collaboration between Canadian knife-makers Brent Beshara and Wally Hayes); a Bud Nealy custom (only one of three in existence) and the Keen Edge Knives trainer that it was based on.





## Sword

A machete or any similar large-bladed knife is, for all intents and purposes, a sword. Whether it's lopping limbs off a tree or a marauding gangbanger, when wielded with skill and force, it makes an extremely potent and versatile weapon. The Filipino martial arts have a saying: "Wood seeks bone; steel seeks flesh." In other words, impact weapons (like sticks) work best for breaking bones, while edged weapons are

most effective at cutting muscles and tendons and making big holes in soft tissue.

Because of its unique attributes, the machete actually fills both these roles very well. The edge can be used to hack and cleave, and the back of the blade provides focused-impact for breaking bones. Adding the flat of the blade to the mix provides controlled, but still very impressive,

A machete can be used as a short sword. You can block with the flat of the blade, then immediately control the attacking arm with your left hand as you chop the bad guy's arm. If necessary, finish with a mobility-killing cut to the quadriceps just above the knee or to the neck.





impact to the mix. If you've ever seen a cop's flat leather sap, imagine feeding it some Viagra and rendering it in hardened steel and you've got one hell of a persuasion tool.

The broad, flat surface of a machete blade also makes applying proper sword/big knife blocking and parrying techniques easier. Unlike the movies, where actors bang their swords together indiscriminately,

real sword tactics are designed to preserve the cutting edge by focusing blocks and parries on the back and, preferably, the flat of the blade. This avoids damage to the edge, keeps the edge from binding in softer weapons (like sticks), and spreads the force of impact over a larger surface area.







## De Cuerdas

Based on the goal of blocking with the flat of the blade and the need to make your close-combat skills as foolproof as possible, my preferred method of using the machete combatively is a tactic from the Filipino martial arts called *de cuerdas*. Start by gripping the machete in a normal grip in your dominant hand (since most of the world is right handed, I'll describe it from that perspective). Put your right foot forward and hold the machete vertically in front of your body with the edge facing to the left and the plane of the blade parallel to your chest. Now place the palm of your left hand on the flat of the blade, being careful to avoid the edge.

In this guard position, you literally "hide" behind the flat of the blade, using it as a shield. If an attack comes in, pivot toward it and drive both arms out simultaneously to block the incoming weapon or, even better, crush the fingers of the hand swinging it. Since you're starting with the flat of the blade pre-positioned for a proper block, you don't have to worry about trashing the edge of your blade.

Once you've stopped the incoming strike, quickly grab or check the attacker's arm with your left hand as you chamber your right hand to chop. With the attacker's arm momentarily frozen in place, clear your left hand if necessary and deliver a short, focused, downward chop to his bicep or triceps. Done properly, this will sever the muscle and instantly disable the arm. On the biceps side, it could also sever the nerves that control the hand and the brachial artery, which carries 10 percent of the body's blood flow — more than the carotid artery of the neck. Done with extreme enthusiasm, you could quite literally disarm your attacker.

To finish the job, deliver a powerful forehand cut to the front of the thigh, just above the knee. This will sever the quadriceps muscle, responsible for extending the knee and allowing that leg to support weight. Destroying this function creates a "mobility kill," dropping your attacker in place and allowing you to create distance and safety.

To put maximum power in your machete cuts, learn to use a reinforced grip. Rather than swinging the weapon only with the dominant hand, place the palm of your support hand on the thumb side of the wrist of your weapon-wielding hand. This reinforced grip transfers the power of the support arm into the swing, increasing your cutting force substantially. It also helps you manage the follow-through of the weapon to safely decelerate and chamber it for a follow-up.



Assuming this grip from the *de cuerdas* guard position is easily accomplished by simply sliding your support hand down the spine of the blade to the wrist. Once you're there, learn to harness the rotation of your hips and shoulders to generate powerful forehand, backhand, and downward cuts, while using the reinforced grip as a "brake" to safely manage your follow through. When you're comfortable working with the edge, experiment with changing the plane of the blade relative to the plane of motion of the weapon to slap with the flat. If a situation doesn't warrant lethal force, a flat-blade slap across the knuckles or shin could be the less-lethal game changer you need to manage it effectively.

Machete-style big blades are the original survival multi-tools with a long, bloody history of effectiveness in combat. Inexpensive, readily available, and amazingly versatile, no well-stocked SHTF tool kit is complete without one. ■■

# Big-Blade Odyssey

My first real machete was a classic U.S. Army-issue parkerized machete made by Ontario that was part of the field kit issued to me when I was a team leader for POW/MIA investigation teams in Vietnam and Laos. After using it in the field a few times, I learned to hate the clunky handle scales that were about as ergonomic as a 2-by-4. After I replaced them with some home-spun scales made from Hawaiian Koa wood, it worked a whole lot better.

After experimenting with a number of native Vietnamese and Lao machete patterns, I finally invested in a Blackjack Knives Panga – a lightweight, extremely fast machete that was more like a Filipino barong than a traditional swept-point African panga. Its injection-molded rubber scales were extremely comfortable and offered an outstanding grip. Although the light blade was not well suited for hard chopping, it performed well on foliage up to and including green bamboo. In addition to clearing more than its share of landing zones, the Blackjack Panga also had the unique quality of “singing” every time it cut. Compared to the thick, primitively heat-treated knives of the local folks, the Panga’s spring temper created a high-pitched “ping” with every cut – something that scared the snot out of my indigenous counterparts.

Since our mission was a direct reflection of Cold War politics at their best, that was just fine with me.

Although my old-school big blades are still alive and well, since Blackjack’s Panga has been long discontinued, I’ve retired them both for sentimental reasons. Their extremely worthy replacement is the Outdoor Edge Brush Demon.

Designed by noted custom knife-maker Jerry Hossom, the Brush Demon faithfully incorporates all the high-speed design features and performance characteristics of his coveted handmade blades into a budget-priced factory chopper. Its wickedly shaped blade is ground from tough 65Mn carbon steel and cloaked in a tough black powdercoat finish. The thermoplastic rubber handle brackets the user’s hand for an extremely positive grip and dampens impact shock for fatigue-free cutting. Unlike most machetes, which have terrible sheaths, the Brush Demon comes complete with a high-quality nylon scabbard that offers multiple carry options. At an MSRP of \$70 and street prices even lower, the Brush Demon is an outstanding value and a key component of my current kit. (See this issue’s “On the Cover” spread on pages 6 and 7 for details.)





# CYBER CRIMES

**You May Be One Click Away From a Costly Invasion.  
Become a Human Firewall With These Tips.**

Story by John Schwartz

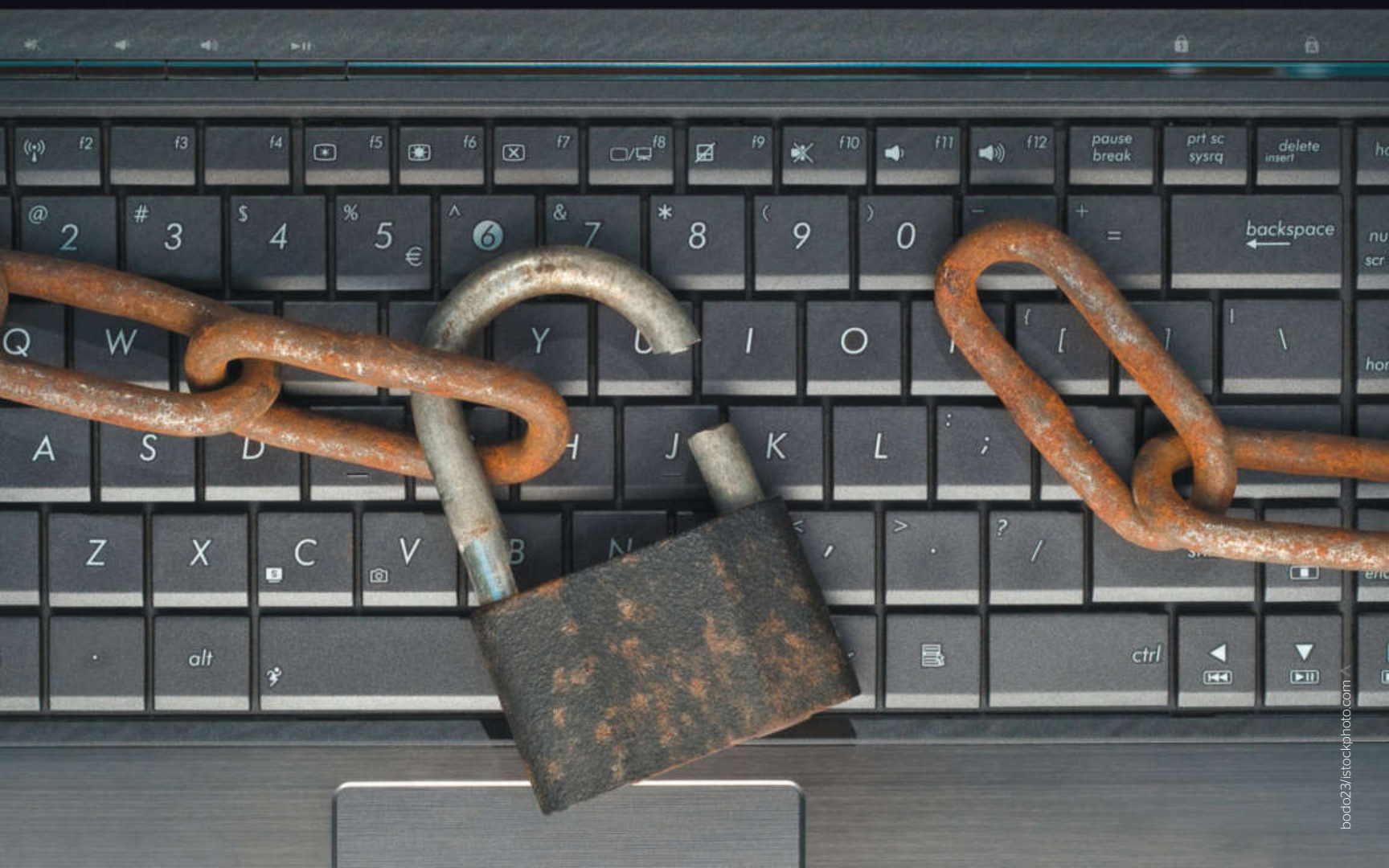
Does this sound familiar?

*SUBJECT: HELPI STUCK OVERSEAS*

*I've contacted my bank and the embassy, the embassy is willing to assist me but my funds are depleted to pay for a new passport fees and other miscellaneous expenses. I don't have access to my account over and My bank said it would take 5 working days to access funds from my account. Please can you lend me some funds? I'll pay back, as soon as I return home. I desperately await your response,  
Fred Jones*

You may have received phishing-type emails like this before. Fred Jones is just a pseudonym in this case, but used as an example to show you that it's interchangeable with any name. If you're on that hacked individual's list of contacts, you may be the recipient of a fraudulent email like this and not be aware that it's bogus.

Of course, being the compassionate person you are, you want to help, right? So you continue on this conversation until you wire money or perhaps some other personal information. Then you eventually discover that you've just fallen for a scam and may have provided the imposter with data that may further compromise your identity and finances.



From the recent cyber breach at the Office of Personnel Management to the Sony Pictures Entertainment hack, there are thousands of nameless, faceless criminals out there who have enough knowledge to tap into state-of-the-art data infrastructure systems to retrieve information. So if they can invade the networks of companies with staff members tasked with stopping a breach, how is the average citizen safe?

"One of the biggest misconceptions people have is that they won't be a target of a hacker. Everyone is a target," says Amy Baker, vice president of marketing for Wombat Security, a provider of software that helps organizations educate their employees on how to avoid cyber attacks. "Many people think that if they haven't seen evidence of hacking or malware that they haven't been attacked. We see examples of high-level breaches where companies didn't know for months that they'd been hacked, but that goes for individuals too. They may have revealed information to a cyber criminal and just not known it. Just because there's no evidence of a hack doesn't mean that a cyber criminal doesn't have your information and intend to use it at a later date."

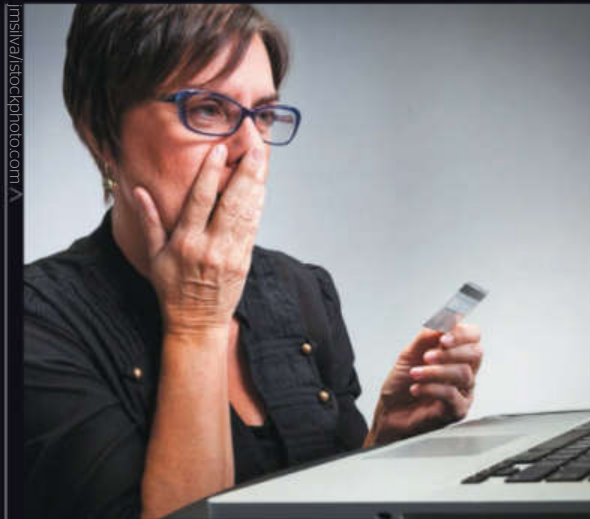
Unfortunately, cyber crimes are rampant, come in many guises, and what's even worse is the offenders often go unprosecuted because people are too ashamed to admit they fell for this type of crime or don't know who to report it to. Whether it's malware, hacking, scams, or any other type of cyber crime, the reality is that buying certain kinds of software or hardware doesn't protect you from your own ignorance.

Like owning a car, parking in a bad neighborhood still invites theft no matter how good your alarm is. Nothing takes the place of recognizing signs of potential threats. Here we'll break down how to recognize common forms of cyber crimes, give you some preventive measures, explain how to report these crimes, and dispel common misconceptions.

## How Does It Happen?

An attacker intent on accessing your personal information will do everything they can to avoid raising awareness of their breach. While large companies and wealthy individuals are certainly targets, the average citizen still has money, an identity, Internet access, and the potential to be misled through false pretenses.

These attacks can be disguised as emails, messages, or websites masquerading as your bank, cellphone provider, a government agency, acquaintance, or service you use (such as eBay). While the source still may appear legitimate, wrongfully assuming that it is can allow transmittal of malware (viruses, spyware, worms, etc.) that can damage your computer, allow access to sensitive information, or trick you into paying for something spurious.



## Common Forms of Cyber Attacks

Cyber attacks are perpetrated through a variety of methods. Phishing is the most common way people fall victim to cyber attacks because it is geared toward personal manipulation. It's most often delivered through unsolicited email delivery, texts, or instant messaging, and poses as a trustworthy source to trick you into revealing information or downloading malware that may damage your system or allow criminals to gain additional intel.

These emails, messages, or websites may ask you to:

- ▶ Provide personal and/or payment information in the context of avoiding criminal action
- ▶ Retain a service for your own benefit, such as file your tax return or scan your computer to remove any newly detected viruses
- ▶ Open an attachment that may appear safe, but contains malware
- ▶ Click on a link that appears to be legitimate, but is really an alias that redirects you to a malicious site or downloads illicit software

Although these are common forms of phishing, it's really limitless in how phishers engage potential victims. It can happen by phone or even by applying for a job online.

Unsafe web browsing is another phishing method to be aware of. Just visiting a site that isn't mainstream can be a trap to invade your computer. Pop-ups can also be a phishing attempt that can still compromise your computer and personal info.

Most cyber crimes are financially motivated to steal information, allowing someone to take money or property; however, some forms of hacking and transmittal of malware are used solely for destructive purposes. "There are three main areas of cyber crime," says Dan Vesley, CEO of Web Precision Internet Services, who has 20 years of web design,

# Biggest Corporate Hacks By the Numbers

Here are just a handful of the worst corporate hacks in recent years. Don't think they affect you? Think again. Hackers breach a company looking for not only employee records and trade secrets, but also customer data – your data.

## 80 million

Records stolen from Anthem, including bank accounts and social security numbers

*Announced in February 2015*

## 109 million

Records stolen from Home Depot, including email addresses and credit card numbers

*Announced in September 2014*

## 110 million

Records stolen from Target, consisting of credit card numbers


*Announced December 2013*

## 145 million

Records stolen from eBay, including physical addresses and login credentials

*Announced in May 2014*





marketing, and IT services experience. "Cyber piracy: Using computer technology in unauthorized ways to steal, copy, and redistribute software or other proprietary information; Cyber trespass: Using technology to gain unauthorized access to a personal or business computer system or website; and Cyber vandalism: Using technology to disrupt networks and destroy computer data and system resources."

Don't think that your mobile device is impenetrable to malware and information theft either. Since so many people store information, communicate, and conduct business through their phones or tablets, there are thousands of methods to invade them. Anything from unsafe Wi-Fi connections to receiving a text message and clicking on an unsafe link to unknowingly downloading a nefarious app can compromise your device and info.

### What Do I Look For?

People often put too much stock in the notion of being impervious to theft by buying certain hardware or anti-virus

software, but these commodities won't keep a naïve user from being fooled into taking an action that's to their own detriment. No amount of money spent on the best computer and security measures will prevent you from potentially clicking on a website that locks your computer and tells you that you are delinquent on your IRS payments, only for you to give your credit card information for fear of arrest. The police and IRS don't call ahead or communicate online to warn you of an impending arrest — they come to the door. The first step is knowing how to avoid the problem.

### When in Doubt, Throw it Out

If something looks suspicious, too good to be true, or is asking you for money and personal information, it's likely a hoax. Do not open unsolicited email. Delete it immediately. While malware cannot be transmitted in a plain body of text, the contents of the email such as links and attachments can lead to an infection.

If you receive an email or text asking you to confirm personal information or provide financial info, even from a trusted source you use regularly such as Amazon.com, your bank, or another company where you pay for services, do not assume it's genuine. The terms of service these organizations offer spells out their policies regarding information disclosure.

Assume someone pressuring or threatening you with legal action as a way of getting your info is doing it under false pretenses. Legitimate sources will usually not use tactics like this and the ones you've done business with before already have your information so there's no need to verify it. If someone is claiming to represent an organization, call it directly yourself so that you can substantiate the accuracy of requests being made for your personal info. Responding to the email or message in question is only going to perpetuate the scam.

Some common indicators of fraudulent URLs are those with hyphens, numbers, or symbols in the address, or a URL you don't recognize. Some fraudulent URLs contain words you might recognize (e.g. "ebay.com"), but are structured to redirect you elsewhere. Also, legitimate services that shorten URLs can also obscure the final destination, so be careful clicking on those if you're not sure of the source. If the URL contains characters such as these or is unfamiliar, do not click on it. You can do a web search for the dubious URL to learn additional information from other sources and verify its legitimacy. "Over 50,000 websites are hacked daily around the world and many are replaced by the hacker with a site that looks like the original, but contains a malicious site. Also web pages that attempt to trick the user into updating plug-ins such as Java or Flash are common ways for hackers to gain access to your PC. You must be extremely careful

## Who Can I Tell?

If you've been the victim of some sort of cyber attack, the likelihood that your local law enforcement agency has jurisdiction or can provide much help is low. So what's your recourse? Sharing this information publicly is the first step toward a solution. The less that gets reported, the more these criminals are free to continue their onslaught. Here are some resources to report crimes:

### Department of Justice

The DOJ categorizes various cyber crimes and can direct you to the proper reporting agency.

➔ <http://tinyurl.com/DOJcyber>

### Federal Trade Commission

If you feel you've been the victim of identity theft, the FTC has resources to report the crime.

➔ [www.identitytheft.gov](http://www.identitytheft.gov)

### Internet Crime Complaint Center

The IC3 was established as a partnership between the FBI and National White Collar Crime Center. You can visit their site to file a complaint if you feel you've been a victim of some form of cyber intrusion or e-scam.

➔ [www.ic3.gov](http://www.ic3.gov)

### United States Computer Emergency Readiness Team

A division of the Department of Homeland Security, US-CERT also provides publications, alerts, and tips to consumers and allows reporting of cyber crime incidents.

➔ [www.us-cert.gov](http://www.us-cert.gov)

### Anti-Phishing Working Group

The APWG publishes reports on cyber crimes, allows reporting of phishing and other cyber crimes, and provides educational resources on avoiding cyber crimes.

➔ [www.apwg.org](http://www.apwg.org)

when installing any such updates," Vesley says.

Job applicants should verify whether or not companies they're applying to actually exist by searching their name, checking what other websites say about them, and looking for a mailing address and phone number you can call or possibly visit in person.

A way to ensure you do not fall victim to a malicious pop-up or website that doesn't allow you to click the "go back" button is to close or force quit your entire browser session. Even if you try to click on the X to close a pop-up or malicious website, you may still enable a malware infection.

While app stores try to eradicate malicious software from



their inventory, free applications are common ways that malware can be downloaded to your phone or mobile device. Research the application before you download it.

## Computer Safeguards

Anti-malware software is another viable preventive measure to install on your computer. Getting the most recent versions available is recommended since new threats are constantly being discovered and anti-malware programs do their best to keep current with the latest recognized forms of attack. Update your software, firewall, and operating system as often as possible and make sure any spam filters are kept on.

On the hardware end of things, products such as encrypted hard drives can be installed as an enhanced safety measure, but do take some training for the average person to install and become familiar with. Find a good computer technician, ask your sales associate, or contact the computer company's tech support group on how to enable your computer's safety features.

## Protection Starts With the User

Although certain software and hardware components are better than no protection at all, these built-in or off-the-shelf safety measures are not foolproof. Anti-malware programs are



engineered to block threats with a known design. The criminals out there generating malware are also doing their best to create workarounds to circumvent the software's safety protocols.

"These kinds of programs would not stop a targeted attack," says Baker of Wombat Security. "The last line of defense against the cyber crime is the individual."

Your friend's "stuck overseas" email may have coincided with a vacation they were actually on because they publicized it online. People divulge a great deal of information through social media without understanding how much they open themselves up to becoming a target. If you receive an email from someone you feel may be posing as an acquaintance, call them directly or ask them a question that only they would know the answer to so that you can attempt to verify if it's sincere. If the response sounds desperate, accusatory, or out of character for what you know about this person, assume it's "phishy" and avoid any further conversation. If the average person encountered trouble while traveling, they should know enough about resources in their location who can help them and would not need to reach out to someone through email for help.

## Good Cyber Security Hygiene

You may be in the habit of using the same password for most, if not all of, your system access needs so it's easy to remember. While that may make your life more convenient in the short term, cyber criminals feed on this predictable behavior, and once they have your password to one site, you can bet they will try it with everything else. Here are some methods to mitigate



crstrbrt/istockphoto.com



having your information accessed by another party:

**Choose a strong password:** Do not use something simple or predictable. Many websites have generic security questions to verify the user by asking for information that's easily extrapolated from various sources like social media, such as "Where did you go to high school?" Use something at least eight characters long made up of numbers, symbols, capital and lowercase letters. Do not use personal information such as your pet's name, mother's name, or birthdate.

Use something no one could easily figure out.

**Use a different password for each account:** This may seem like a huge pain, but it may mean the difference between having your info stolen or not. Keeping a written ledger or some other record in a safe place with your current passwords will help if you feel you can't remember them. Saving a list of your passwords on your computer or smartphone is not recommended. There are also applications available for your computer and mobile devices which generate unique passwords and help you use and manage them all.

**Change your passwords often:** Changing your password every 60 days is a good rule of thumb to ensure safer account access. Reusing a password is acceptable, but wait at least a year before changing your password on a particular account back to a previously used password.

**Password protection:** Be sure your devices offer password protection and keep that feature activated so you aren't spelling it out for the world to see.

## Social Media

We all have those friends — the ones who can't live without making some announcement about themselves every 20 minutes on Facebook, Instagram, Twitter, or Google+. While you may want all your friends to know what an interesting life you live, your vanity and need for attention may cost you more than you realize. Sharing photos while you're on vacation, checking in at your favorite locations, and showing a photo of the new home you just bought are things that invite disaster.

What you reveal about your personal life may be all that's needed for someone to accumulate enough info about your relatives, hobbies, friends, pets, age, and workplace to impersonate you, guess a password to access your personal information, steal property, or potentially harm others you know.



Andrew Rich/istockphoto.com

# 5 Myths About Malware

## Myth 1: Macs Don't Get Malware

Steve Jobs fans argue that Macs are better than PCs partly because the latter are petri dishes for digital viruses — but both are susceptible to malware. Attacks such as phishing are targeted toward the user, so your choice of operating system becomes a moot point if the person on the keyboard falls for a scam. Hackers and cyber criminals tend to focus on the most popular systems for a higher success rate, so no matter what cellphone, tablet, or computer you buy, you cannot solely rely on its built-in safety measures to protect you.

## Myth 2: Emails From Known Individuals Are Safe

People have their emails and text accounts hacked all the time. Clicking on a link in an email or message, downloading an attachment, or providing personal info online to someone you know is risky. If emails and messages appear to be random or unsolicited, even from people or companies you know, do not click on any links, open any attachments, or respond. Contact that person directly to verify if it's legit.

## Myth 3: Visiting Reputable Sites Is Always Safe

While avoiding questionable looking sites is good advice, there have been instances where even legitimate, reputable websites can be compromised. This may happen by receiving an email to visit a website that appears to be something you use regularly such as your bank, but is really a façade to record your information or deliver malicious code to your computer. You must exercise caution in visiting all websites.

## Myth 4: Infections Are Always Obvious

Cyber criminals do not want to alert users to their presence. While some malware is designed specifically to disrupt an operating system and has obvious signs of infection, hacking and spyware can remain hidden indefinitely to record keystrokes for passwords, send spam through your email, or use your computer to attack websites.

## Myth 5: Phones and Tablets Do Not Get Malware

Mobile traffic is quickly increasing and so has malware specifically designed for smartphones and tablets. Malware protection for mobile devices is available through many providers and is a good safety measure to implement.

Here are some good tips to safely engage in social media:

**Stranger Danger:** You may be getting friend requests from people you don't know and feel flattered that they have taken an interest in your life. However, since you don't really know what their intentions are, it's best to avoid this. Don't interact with people you don't know, regardless of how cute they may look in their photograph or if you have a mutual friend.

**Over-Sharing:** If you want to share vacation photos, do it after you're home. Checking into a restaurant may get you a discount, but that cheaper meal won't taste so good when people monitoring your posts know you're away and burglarize your home. Posting pictures of your kids and how proud you are that they got honor roll at XYZ school could potentially invite a kidnapping. The less you share, the safer you are.



## Wi-Fi

Public, open Wi-Fi is a feeding ground for cyber criminals. There are many ways they can monitor and breach these connections. Using a secure network that has a password will minimize your chances of revealing information. Visiting secure websites with "https" in the URL prefix during a Wi-Fi session is another way to reduce the information you share in an open network. Utilizing a VPN service (virtual private network) can also be done to keep your browsing hidden. Free and paid options are available for VPNs on various devices. Doing a web search for VPN systems and their ratings can help you select and set up a VPN for your operating systems.

Installing updates to your devices should not be done on public Wi-Fi since it can sometimes be a false prompt that can trick you into downloading malware. Log off any services that you were signed into during your browsing session and deactivate any "connect automatically" features that your device may have that would connect you to that system again if you're in range.

## Educate Yourself

Here are some resources you can visit to learn more on cyber incidents, how to protect your computer, and to get educated on common Internet scams:

### How to Protect Your Computer

🔗 [https://www.fbi.gov/scams-safety/computer\\_protect](https://www.fbi.gov/scams-safety/computer_protect)

### How to Protect Your Kids

🔗 <https://www.fbi.gov/stats-services/publications/parent-guide>

### IC3 Crime Prevention Tips

🔗 <https://www.ic3.gov/preventiontips.aspx>

### Recognizing Internet Fraud

🔗 [https://www.fbi.gov/scams-safety/fraud/internet\\_fraud](https://www.fbi.gov/scams-safety/fraud/internet_fraud)

### Tips, Tools, and How-to's For Safe Online Communication

🔗 <https://ssd.eff.org>

You can also enable a two-factor authentication feature on websites you commonly access, such as your email where a password can easily be sniffed out. This is not a perfect solution, but does offer another layer of security.

## Shut Down Your System

Infiltrations can still happen even if your browser is not open. When you have finished an Internet session, don't just leave the computer on or log out. Shut off the computer completely as an added safeguard measure.

## Big Brother?

Perhaps George Orwell was right. Although we enjoy the convenience of being easily connected with the rest of the world in so many ways, it's not without its drawbacks. Our digital world continues to grow and, with it, our privacy continues to not only be violated, but things such as social media have also magically convinced us that privacy is an old idea that we no longer need.

We can, however, mitigate our own exposure by practicing good cyber security skills. When setting up your computer, research cyber security tips on what safeguards you can activate to increase your level of privacy while online. Ask your mobile device provider what safety features you can implement on your and your children's cell phones and tablets. Use discretion when communicating with unknown individuals or being asked to reveal personal information online.

And lobbying politicians for more information disclosure and mandatory cyber security education is one step toward a safer digital world. 🌐



# SHARPEN YOUR KNOWLEDGE

## Do You Know Your Blade Grinds and Profiles? You Should — They Can Make Or Break Your Survival Knife

Story and Photos by Mike Searson

**D**o you ever start shopping for a new knife, read a few catalogs, browse a few websites, or thumb through a magazine, and suddenly feel like you forgot how to speak English?

Knife manufacturers love to litter their marketing with all sorts of fancy terms like flat grinds, chisel grinds, Scandi grinds, zero bevels, mid-tech, forged, stock removal, textured G-10, S30V, Damascus, and pattern-welded — but what do all these terms mean? How does understanding these terms make one a better prepper?

They really are pretty easy to understand once you get your head wrapped around them. Knife-makers are a sensible lot and most of these terms have pretty direct meanings, but even after knowing what they mean, it still takes a little trial and error to determine which grind, edge, pattern, or profile works best for the task at hand.

Considering that we're always striving to provide the most in-depth knowledge on survival, we've compiled the following tutorial on knife grinds and blade profiles to help you understand each one, and let you pick the best tool for your needs.



## On the Grind

The heart of the blade is essentially in the grind, or how the cutting edge is formed. This is the working part of the knife for 90 percent of its tasks and reflects how well it'll cut and, to a degree, retain its sharpness. There are many types of grinds out there. Here's a look at the most common types you might find:

### Flat Grind



The flat-ground or "V ground" blade is one of the most basic edge styles in existence. In a flat-ground blade, both sides taper toward each other at a consistent angle from the spine of the blade to the edge, where they meet. The flat grind is most commonly found in kitchen knives, as well as many blades manufactured by Spyderco and Strider Knives.

Flat-ground knives have a distinct advantage in that they are possibly among the easiest to maintain.



### Hollow Grind



Emerging in the 19th century as a grind to use on a straight razor, the hollow-ground blade gained popularity in the hunting and sporting community in the late 1950s. It has a distinctive concave grind to the edge, so that both sides of the knife have a bevel that bows inward until they meet in a thin, sharp edge.

Unfortunately, these are not the most durable edges, and proper maintenance needs to be performed more frequently by stropping or sharpening. Buck hunting knives, straight razors, and a number of custom knives make use of this thin and extremely sharp edge. Maintenance of a hollow-ground blade is not difficult, but must be performed often.



### Scandinavian Grind



This grind, sometimes shortened to Scandi grind, starts below the halfway point and has no secondary bevel on the edge. Scandi-ground blades are ideal for whittling, wood-working, and bushcraft. The high bevel was desired so that the user could keep an eye on the wood grain while carving.

More of a carver than a chopper (which will certainly ruin the edge), the Scandi grind requires frequent stropping to maintain its sharpness. Using any other type of sharpener will ruin the edge or at least change the grind by adding a secondary bevel.



### Convex Grind



Convex edges can be some of the most difficult to sharpen, but the edges are extremely durable and sharp. A convex edge features a bevel on each side of the blade, slightly rounded (convex) as they taper to form the edge.

Convex grinds are very specialized and are commonly found on heavy-duty chopping tools such as axes and machetes. The somewhat rounded shape of the edge will not bind in wood and helps to separate the two halves of the wood while they're being split. This is why it is also referred to as the axe grind.





### Chisel Grind

The chisel ground blade is an older design from Asia that is very similar to the type of grind found on woodworking chisels. Only one side of the blade is ground, with the opposing side left flat. The chisel grind was popular on expensive Japanese kitchen knives and was introduced to the United States by the late Phill Hartsfield in the 1960s.

Hartsfield put them on his combat-oriented knives, which became popular with Navy SEALs and Army Special Forces. In the mid-1980s, another California-based knife-maker, Ernest Emerson, asked Hartsfield's permission to use this grind on his tactical folding knives, and within a decade they began appearing on all types of tactical knives. (See Issue 21 of our sister publication RECOIL for an exclusive interview with Emerson.) The chisel-ground blade carries no parasitic drag and can be made extremely sharp when there is no secondary bevel in what is known as a zero grind.

However, a zero-ground blade will need religious stropping to keep it that sharp. Sharpening this type of edge on a stone, a sharpener, or anything other than a strop or buffing wheel will put a secondary or compound bevel on the knife. The majority of factory chisel-ground blades have this bevel, which actually makes the knife easier to maintain in the field, but takes away some of its real cutting potential.



### Compound Bevel

The compound bevel or double bevel is another grind that is commonly found on many modern knives. In essence, it's one of the aforementioned grinds with a secondary bevel. It adds durability and ease of maintenance to the grind.



### Asymmetrical Grind

Typically a combination of two of the previous designs, the asymmetrical grind uses two distinct separate bevel angles for each side of the blade. (For example, one side may be convex and the opposite side flat.) The thought behind this is to produce a more durable edge by giving the user the best of both worlds.

Some makers and manufacturers take a different approach by grinding portions of the blade differently, such as making the front half a flat grind and the rear half a hollow grind.



## User Profile

By looking at the various edges, the user can get an idea of what he needs in a blade. A hunter or trapper might prefer the hollow grind for skinning and dressing game, a Navy SEAL might prefer a chisel grind with a secondary bevel on a folder for its ease of sharpening or cutting ability, but turn to a convex grind on a machete for clearing brush.

The next question might be to think what profile is best for a particular knife. If the edge is the heart of a blade, the profile is its soul. This conveys much of the overall look of the knife and defines its function.

### Drop Point

Today the drop point is one of the most prolific blade styles – but it was not always so. The late Bob Loveless popularized this style in the 1950s by grinding in such a manner to give the blade's spine the same strength and thickness from hilt to tip. It is one of the most practical profiles for a daily-use knife.

The tip is lowered, giving the user extra control when cutting with the edge without sacrificing too much power if the knife needs to pierce with the tip. This makes it extremely versatile, which is why you see it on knives for a wide range of functions: hunting, skinning, caping, woodwork- ing, self-defense, etc.



### Clip Point

At one time the clip point blade was the predominant blade style throughout most of the world. Originally, it was driven by the forging process, as the tip of the blade naturally curves upward due to the heat and hammering. As machine-ground blades replaced forged ones, the style stayed around through familiarity and perhaps as homage to the Bowie knife of the 19th century.

It gets its name from the back of the blade nearest the tip being clipped in either a straight or concave fashion. Common on pocket knives as a means of safely accom- modating the blade within the handle when closed, the clip may have a false edge to aid in penetration. This profile is good for general use, hunting, skinning, caping, woodworking, and self- defense.



### Sheepsfoot

This blade was originally designed to trim the hooves of sheep and goats. It has a straight edge and a straight dull back with a rounded and unsharpened tip that curves to the edge. This special purpose knife is designed to be held by the fingers very close to the edge for more control.

Today, it's become increas- ingly popular on rescue knives as they allow a first- responder to cut someone free of a seatbelt, rope, or clothes, while keeping the sharp tip away from the accident victim's skin. You'll also find sheepsfoot blades on knives used for skinning, woodworking, and some- times self-defense.



Photo by Patrick Vuong

### Wharncliffe

Similar to the sheepsfoot, its curve on the back edge is more gradual and is typically thicker than knives of a similar size. This specialty blade was designed for use by mariners on sailing ships of old. The flat blade makes for predictable cutting action; important when the swaying movement of ship could cause a drop-point- shaped blade to slip from the work and penetrate a sail or a hand. Its tip is also excellent for fine work and the flat edge is easy to maintain.

Nowadays, you'll most commonly find a Wharncliffe on box-cutters, as well as other blades for rescue, skinning, woodworking, and self-defense.



Photo by Patrick Vuong



### Hawkbill

Resembles the previous two profiles, with one exception: The tip is pointed to add in penetration when used to strike and cut. This makes for a potent self-defense blade when used properly and with the correct technique.



Photo by Patrick Vuong

### Persian

This design is usually the opposite of the three previous types, as it curves upward with a pointed tip. This profile excels best at filleting, though you'll also see it on certain combat and general-use knives, as well.



### Gut-hook

A gut-hook might be found on other blade profiles as an added accessory, but the true gut-hook has a blunt edge with a beveled and sharpened single serration usually cut in the top plane of the blade. This was originally intended to aid in the skinning of animals, where the blunt tip would not damage the hide or cut the intestines while dressing it out.

Common on hunting blades, the gut-hook is also found on rescue and military knives. The shrouded hook is a great way to cut seatbelts and cordage without risking injury from an exposed knife tip.



### Tanto

The distinctive tanto stands out in the crowd. This type of profile was introduced to the United States on custom knives by the late Bob Lum. It gained popularity in the 1980s when companies like Cold Steel produced them under a variety of names and configurations. They exploded in the 1990s when tactical knives began to overtake the cutlery industry with tanto designs from makers such as Bob Terzuola, Allen Elishewitz, and the aforementioned Emerson. These modern U.S. blades have a flat spine, but the tip is most often set at an obtuse angle to the edge. Some have the spine angled toward the tip, creating a sort of triangle at the business end.

They're great for penetrating, but are less versatile than drop-points due to the obtuse angles near the tip. You'll see tanto profiles on tactical knives, everyday-carry (EDC) blades, and sometimes hunting knives.



### Recurve

If there was ever a knife of the new millennium, it would have to be the recurve blade. On a recurve, the "belly" of the knife bows out from the edge before the point and gives more surface area for cutting. Recurves proved popular following the turn of the new millennium on many custom and factory designs.

These can be found on hunting knives, skinning blades, self-defense tools, and some EDC models.





### Reverse S

This design was popularized by Spyderco and is found on many of their designs, such as the Cricket, Dodo, Matriarch, and Civilian. The sweeping curve allows for more surface area on the cutting edge than a typical straight edge or even the recurve. Hence, the blade in question might be right at the legal limit in most jurisdictions, but the extra surface area gives the cutting performance of a somewhat larger blade.



### Dagger

It has had a single purpose for centuries: combat. This ancient profile is steeped in symbolism and due to its symmetry has been the base design of many art knives. Originally a scaled-down version of a double-edged sword, the dagger features two symmetrical sharpened edges. Some modern makers prefer to make the top edge unsharpened to avoid nefarious weapon laws in most jurisdictions and to make a more utilitarian blade. Its strength is in stabbing as the double edge (or top false edge) aids in penetration.

Carry of a dagger is heavily restricted, if not outright prohibited, in most jurisdictions. In response to this, a number of makers have refined the design into what is more commonly known as a spear-point blade or a bull-nose profile, in which one side of the blade has a false edge or is not ground, but maintains the symmetrical profile.



# Tanto Myth- Busting

The tanto is a popular blade profile, but unfortunately there are some misnomers floating out there, mostly due to its name.

In feudal Japan, a tanto referred to a knife or dagger worn by samurai. It could have been single or double edged and was used mainly for stabbing (though it was also capable of slashing). Its profile resembled a straight-back blade: the cutting edge curved at the end where it met the flat spine to form the tip (similar to modern, high-end cutlery knives). Many of today's tanto blades today look nothing like the ones used by the samurai.

Another myth about the tanto that persists is that they're excellent at penetrating armor and the like. This has more to do with the thickness and strength of the steel in the blade as opposed to its profile.

The other falsehood is that the popular CQC series of knives by Emerson are based on the tanto. In actuality, that tip was designed as a point that would shear and chop in the manner of the guillotine blade. Unfortunately, knife collectors and writers at the time looked at the blade, saw that it superficially resembled a tanto coupled with the Japanese chisel grind, and assumed that the knife was a tanto.

## What Combo is Best?

Now that we've just downloaded a gang of knife knowledge on your internal CPU, you might be asking, "Great! I have all this info...now which knife do I buy?" Like pretty much any survival gear you invest in, the best knife is the one that fits your needs and your wallet.

If you're pretty much an urbanite who seldom even goes for walks in the park, let alone day-hikes or hunts, then a gut-hook skinner will probably be a waste of money. Likewise, if you find yourself in the woods most of the time, a double-edged dagger would make for a pitiful bushcraft knife. Looking for an all-in-one survival blade to keep in your go-bag? Keep looking past a sheepsfoot with a hollow grind. What does this all mean? Each design has inherent strengths and weaknesses.

When evaluating vastly different types of knives, sometimes it's pure aesthetics that win out. That is, much of this comes down to personal preference and what appeals to you visually. At the same time, be realistic and remember that just because a knife looks cool doesn't mean it's the most useful. ❧











# 7 KEYS TO SURVIVOR MINDSET

## A Combat Psychologist Analyzes What It Takes to Survive and Thrive When SHTF

Story by Dr. Neal Olshan

**F**red Rickenbacker is most noted for his exploits as a World War I pilot, achieving the title of Ace of Aces with 26 confirmed kills. He was awarded the Medal of Honor, seven Distinguished Service Crosses, and the World War I Victory Medal, among many other accolades. A true American badass if ever there was one.

Although most military history buffs may be aware of his record in the First World War, Rickenbacker actually escaped an early demise numerous times as a precocious kid, race car driver, and airline owner. One of Rickenbacker's most famous near-death experiences happened after he returned to civilian life. In October 1942, then head of Eastern Air Lines, but still a celebrity of sorts, he was asked to participate in a tour of bases in the South Pacific. He and seven U.S. Army airmen were provided an older B-17 as transportation, but when the bomber flew off course and their fuel ran out, they were forced to ditch in the central Pacific Ocean. They were hundreds of miles off course, dangerously close to Japanese-held islands, and drifted in life rafts while sharks circled for weeks.

Rickenbacker naturally assumed a leadership role. He captured a seagull that had landed on his head, helped divvy it up as food, and used parts of the bird as fishing bait. When the men would lose hope, Rickenbacker encouraged and pushed the men to get mad. After 24 days adrift, they were spotted by a U.S. Navy patrol aircraft and rescued.

An analysis of this particular Rickenbacker event shows that, at various times during his long-term survival situation, he utilized all of what I consider to be the "Seven Keys to Survivor Mentality" at least once and a few every day. He probably never consciously thought, *Now is the perfect time to use Key Four*. His survivor mindset was so fine-tuned that conscious intent was not needed. But how about for the rest of us? Follow along as I explain the seven concepts, how they've been used historically, and how you can start developing them in your everyday life.

Photo by Shoot to Thrill Photography





Andrew Howe/istockphoto.com

## KEY 1

### Learn From History

While all seven keys are important, possibly the most important resource can be found in the historical accounts of those who have survived harrowing ordeals. Let this article be the trigger for an exploration into the history of the trials and tribulations of people who overcame incomprehensible odds and persevered.

By using Internet search engines (or better yet, that old-school archive called a public library), you have the greatest window to view the history of men and women whose stories are truly inspirational. You will begin the process of imprinting and awakening your survivor mindset by consuming nonfiction books and documentaries of adventurers, military heroes, and ordinary people who have reached deep into their inner core to find their survival instinct.

“Those who cannot remember the past are condemned to repeat it.”

— George Santayana

▲ An important method to building your own survivor mentality is researching historical examples of iron-willed survivors, such as Eddie Rickenbacker, who survived 24 days adrift in the Pacific Ocean after the B-17 he was traveling in got lost and ran out of fuel during World War II.

➤ Robert Zugg takes a break from trail-running in Afghanistan, where he needs to stay fit to maintain not just a strong body, but also his survivor mindset.

## KEY 2

### Physical Conditioning

While one's mental state is often the deciding factor in whether one survives a life-threatening situation, there's no denying that one's physical state is a huge part of the survival equation. If you're fit and capable of overcoming external obstacles, there's a good chance your mind will push to overcome internal obstacles, too. After all, when all is lost, the only tools you'll have left are the ones you were born with.

One extraordinary example of this occurred in March 1943. A team of four expatriate Norwegian commandos, including Jan Baalsrud, sailed from England to organize and supply the Norwegian resistance. Betrayed shortly after landing, the team was ambushed by the Nazis, leaving Baalsrud as the lone survivor. He was poorly clothed, one foot was entirely bare, part of his big toe was shot off, and he was relentlessly pursued by the Nazis. He survived an avalanche, suffered from frostbite and snow blindness, but made his way over the Norwegian mountains and tundra to a small Arctic village. He had three great assets: his determination to return home, years of physical conditioning, and his training as a commando.

Here's a more modern example: As a security contractor, Robert Zugg is stationed in one of the world's most dangerous places: Afghanistan. He always makes physical conditioning a priority when he's not working for the U.S. government in the area around Kabul. With suicide bombings, anti-American sentiment, attacks by all sorts of warring factions, brutal winters and scorching summers, and just the general hazards of living in that region, Zugg learned



Photo courtesy of Robert Zugg

from his combat experience as a decorated U.S. Marine that preserving in the face of adversity is a lot easier if you can walk up a flight of stairs without huffing and puffing.

Fitness competency is the physical engine that helps survivor mentality become a reality. If you're lost in the woods, facing a trio of street thugs, or swimming through a flooded street, it's a little too late to begin an exercise program.

## KEY 3 Think Survival

There's a saying in gymnastics that the body follows the head. In the psychology of self-preservation, if you say something repeatedly, the brain will do everything in its power to make the repeated mantra occur. Therefore, repeating the phrase, "I am a survivor," is one of the most effective techniques for success.

If, in the final mile of a marathon (26.2 miles), a runner repeatedly thinks, *I'm too tired. I'll never make the finish line*, his brain interprets this statement as a command and begins the process of slowing the biochemical reserves



millsymet/istockphoto.com

needed to provide energy for the final 1,760 yards. This is an example of negative-outcome thinking. Repeat something often enough and the brain will make it reality. There's a reason why having a positive mental attitude is preached ad nauseam in every survival book, scout manual, survival video, and military SERE (survival, evasion, resistance, and escape) class.

Aside from thinking positively, another fuel that propels survivor mindset is motivation. What would motivate you to stay alive in a life-and-death situation? For Steve Callahan, it was family.

On the night of January 29, 1982, the sailor and naval architect headed from the Canary Islands to the Caribbean

alone in a small boat. On February 5, his craft sank in a storm, leaving Callahan adrift in the Atlantic in a 5½-foot inflatable rubber raft with only 3 pounds of food, a few pieces of gear, and 8 pints of water. Callahan drifted for 76 days on the ocean before he reached the Bahamas. Throughout his ordeal, he never gave up thinking about the people who needed him.

What motivates a person to stay alive when everything has gone wrong? Many survival stories speak of the survivors' faith, which provides them with hope. Other survivors have told of their intense desires to get back to family, friends, and loved ones. The motivators for each individual will be different. So, if you were in Callahan's wet boots, what would motivate you to live on?

## KEY 4 Eliminate Two Emotional Traps

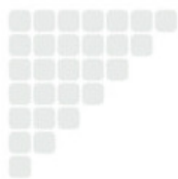
It's important to think positively and have a mantra to rely on. But those two strategies might be difficult if you don't first eliminate two common emotional traps:

▼Freezing up or having feelings of "Why me?" after a traumatic incident can weaken your survivor mentality.



Photo by Shoot to Thrill Photography





**1. Mental Paralysis:** Here's a really simple formula to explain why this emotional trap needs to be eliminated:



The essence of anxiety is inaction, and when the anxiety levels increase to panic, several consequences occur:

- › Mistrust of others
- › Impaired decision-making
- › Inability to follow directions
- › Inability to visualize a successful outcome
- › Inability to act as a team member
- › Self-pity and self-sabotage

How do you reduce anxiety and stay calm? Especially in a dire circumstance? The answer to that could be enough to fill a whole other article. [Editor's note: See the "Evolution of Mindset" feature in Issue 15 of our sister publication RECOIL.] But without professional consultation, one of the best resources would be reputable websites on the Internet and, in particular, videos. A quick Google search for videos to reduce anxiety produced 2,180,000 hits in less than a minute.

Learning to control anxiety and panic reactions is a skill that can and should be used in everyday life — but, again, finding yourself in a life-threatening situation is not the time to begin practicing those skills.

**2. Victim Mentality:** A victim mentality might be one of the initial reactions to traumatic situations that involve prolonged periods of survival. Unfortunately, if left untreated, this will infect motivation, perseverance, and hope. It could manifest itself through dysfunctional thoughts and verbalizations. Victim mentality could show up as a verbal criticism of others, unwillingness to take responsibility for one's own actions, and a belief that survival is for other people.

## KEY 5

### The Power of Focused Anger

"Anger is bad." "Anger is a wasted emotion." "Anger is trouble." "Anger is not a solution." The use of anger has had a negative reputation ever since Sigmund Freud tiptoed through the unconscious mind. Sure, anger can be a wasted emotion, and uncontrolled anger can lead to dire consequences — but under certain circumstances, anger can be one of the key ingredients to survivor mindset.

Controlled anger activates the basic survival instinct that can alert the body's physiology to be prepared for a challenge and force the brain to focus on a solution that leads to survival. The aforementioned story of former fighter ace Rickenbacker is another example of well-focused anger boosting chances for survival.

## KEY 6

### Maintain Hope

Jon Krakauer's bestseller, *Into Thin Air*, detailed the events of the ill-fated expedition that left eight people dead and marked one of the deadliest climbing seasons in the history of Mount Everest. The most amazing part of the narrative focused on Beck Weathers, who was twice abandoned and presumed to be dead. Unbelievably, Weathers spent 18 hours in subzero temperatures in Everest's death zone before regaining his senses and staggering into camp. He was suffering from severe frostbite, corneal lacerations, and



# Reading Material

Here's a partial list of books that influenced the development of Dr. Neal Olshan's "Seven Keys to Survivor Mentality."

- › **Adrift: Seventy-Six Days Lost at Sea**  
by Steven Callahan
- › **Alive: The Story of the Andes Survivors**  
by Piers Paul Read
- › **Endurance: Shackleton's Incredible Voyage**  
by Alfred Lansing
- › **Into Thin Air: A Personal Account of the Mount Everest Disaster**  
by Jon Krakauer
- › **Lone Survivor: The Eyewitness Account of Operation Redwing and the Lost Heroes of Seal Team 10**  
by Marcus Luttrell with Patrick Robinson
- › **Man's Search for Meaning**  
by Viktor E. Frankl
- › **Papillon**  
by Henri Charriere
- › **The Diary of a Young Girl**  
by Anne Frank
- › **Unbroken: A World War II Story of Survival, Resilience, and Redemption**  
by Laura Hillenbrand

hypothermia — and his face was so badly frostbitten that it scarcely seemed human.

“Never, never — in nothing great or small, large or petty — never give in except to convictions of honor and good sense.”

— Winston Churchill

Over the next year, Weathers underwent 10 surgeries and his entire right hand and most of his left hand were amputated. He said that he survived his Everest ordeal through constant self-talk, telling himself not to give in to the cold.

Never giving up is essential to a successful survivor mentality. This doesn't mean being foolhardy or taking foolhardy risks.

## KEY 7 Training

Keys 1 through 6 are really precursors to the final key: training. The seventh concept serves as the transition to utilize and refine the survivor mindset under controlled experiences.

♥ Take training classes to learn skills, build self-confidence, and reinforce a survivor mentality.



## About the Author

Dr. Neal H. Olshan is a consulting psychologist, pilot, writer, and fine art photographer, as well as the chief combat psychologist for LMS Defense. He's the developer of the Evolution of Mindset Training Program. Olshan is the author of six non-fiction books and wrote the novel *The Panama Escape* with his wife, Mary. He can be reached at [mindsetdoc@gmail.com](mailto:mindsetdoc@gmail.com).

🔗 [www.drolshan.com](http://www.drolshan.com)

Make it your goal, and that of your loved ones, to attend at least one seminar and one experiential training course each year. The survival skills and techniques taught in these courses will increase your self-confidence and reinforce a survivor mentality.

Remember, there's a gigantic difference between thinking and experiencing. As an example, your chances of starting a fire without matches or a lighter are greatly improved if you've already practiced it until it became a skill. Having the fire-starting skillset not only allows you to keep warm and to cook food, but more importantly it also gives a jolt of self-confidence to the survivor mentality.

## The Common Thread

Every member of our species survives the trauma of childbirth with an innate capacity of developing a survivor mindset. As we grow, mature, and choose our unique paths through life's mazes, this begins to weaken through disuse and verbal self-talk — but it never totally disappears. Some behavioral geneticists proselytize that we trained ourselves to become a society of people who give up at the first indication of failure or danger, immediately waiting to be rescued. The Seven Keys of a Survivor Mentality is a method for reestablishing the skillsets that helped us to take our first deep breath and test out our lungs.

The takeaway for the naysayers is that every human being starts life with the survival imperative. It's always present, but not always functioning. Each individual must make the conscious choice to flip the internal switch and turn on the self-preservation mode.

The bottom line is that survivor mentality has the potential to positively affect one's lifestyle. Although most people don't experience life-or-death situations on a regular basis like a first-responder, military personnel, or outdoor adventurer might, the use and practice of the seven survivor mentality keys may be the difference between a life well-lived or one of mediocrity. ■■



# HYDRATION PACK

## BUYER'S GUIDE

### Water, Water Everywhere and Not a Drop to Drink...Unless You're Wearing it

Story by Martin Anders  
Photos by Michael Grey

**I**t's been almost a full day now and still, there's no one in sight. You estimate that you've been walking for about three hours since your last break and you're just about out of water. The two small bottles of water you carried got you this far, but you've got further to go. Three hours on your feet, and there hasn't been a sign of another living soul. There's got to be someone down this next stretch, you say to yourself.

Regardless if the above scenario played out on a nature hike or during a disaster, a lack of hydration can still be fatal. We won't belabor the reason why you'd need as much clean drinking water as possible. If you're reading this magazine, you already know why.

With space already limited in your pack and on your person, what's the best way to carry a large amount of water? Sure, you can carry a few half-liter bottles in a backpack or on a belt, but it can get mighty cumbersome and be an inefficient use of precious space. In this buyer's guide, we take a look at backpacks that are made to carry hydration reservoirs. Also called hydration packs, these backpacks have compartments for water bladders and furnishings that help route drinking tubes through and around the pack to keep them in place for ease of drinking.

#### What to Look For

**Purpose:** When buying a hydration pack, it's good to start out by deciding how much cargo space you need first. What's the purpose of this pack? Is it for a single-day hike? A multi-day camping trip? A get-home bag from the office in case all hell breaks loose? Pick the size of your bag accordingly.

**Weight:** Also be mindful of the overall weight after your gear and water is loaded into it. The great thing about a hydration pack is that it uses a refillable water reservoir that usually is positioned vertically on the back of the backpack. This helps with the overall balance of the bag, even when full with other gear.

**Ease of Use:** Consider how easy (or difficult) it is to access the reservoir for refilling and cleaning. Look at the hydration tube and make sure it's easy to access and stow while on the move. As with all gear considerations, these are personal choices that require some in-person fiddling.

**Frame Size:** When buying a backpack, make sure the bag's size is suitable for your body's frame. An over- or undersized pack can reduce your stamina and create back problems you simply don't need to deal with while contending with the Apocalypse.

You wouldn't hike with an ill-fitting boot would you? A properly fitted pack can enhance your endurance and reduce fatigue. A reputable retailer should be able to help you choose the correct size backpack.

**Bladder:** A key factor to consider is the hydration bladders themselves. There are many different variations, so shop around. Investigate how easy or difficult each is to clean. Also examine how they're secured inside your pack of choice.

Yes, water is a heavy commodity to carry, but the difficulties of storing and carrying water is greatly reduced with the use of a hydration pack. Which one is right for you? Let's examine some of the newest models out now.





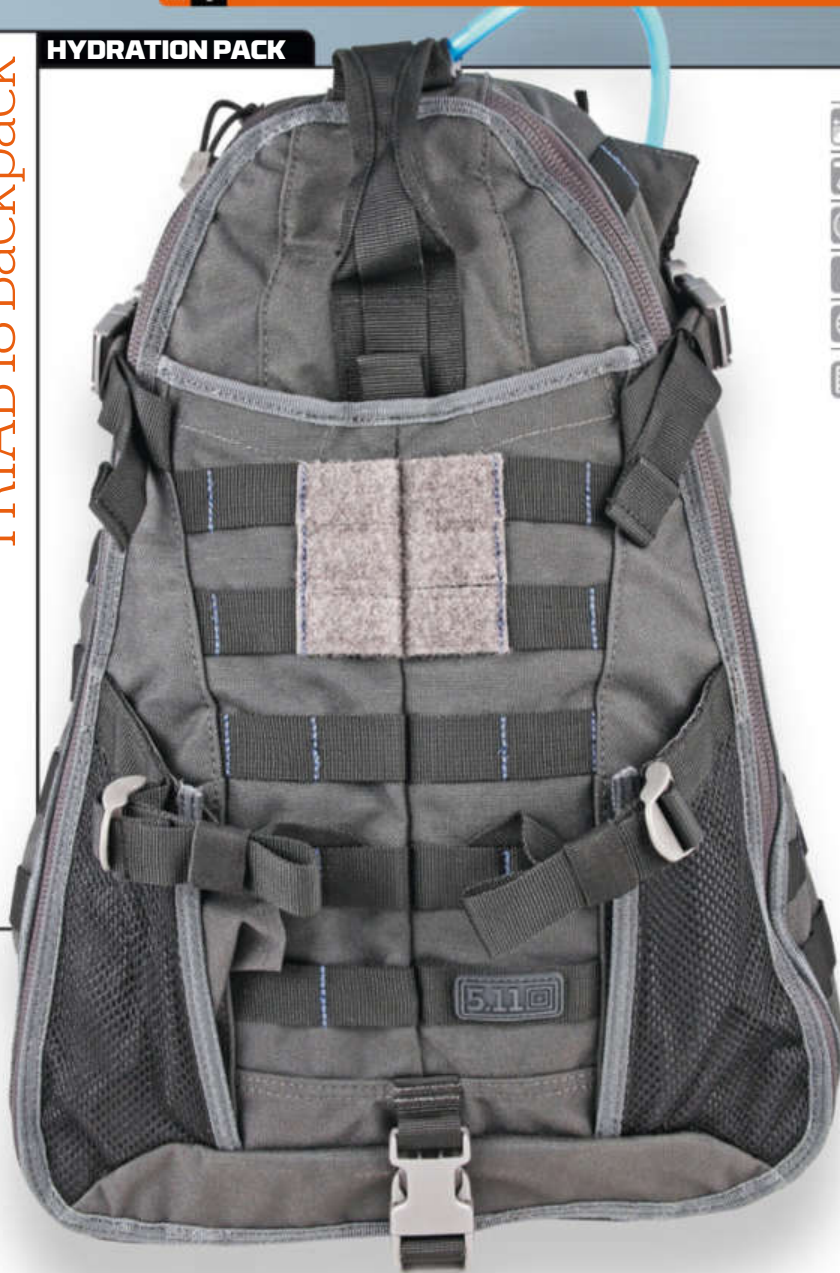
CAMELBAK

RIM RUNNER  
22



5.11  
TRIAB 18 Backpack

## HYDRATION PACK

**DIMENSIONS**

20 x 13 x 7 inches

**WEIGHT**

3 pounds, 4 ounces

**COLORWAY**

Midnight Ash (shown), Sandstone

**MSRP**

\$140

**URL**

www.511tactical.com

**NOTES**

The TRIAB 18 is designed as a one-strap sling bag that can be used for a wide range of applications. For those who like a traditional-style pack, a second strap is also included for two-shoulder carry configuration. It's rugged and accommodates a hydration bladder in a slot pocket at the rear. It has hydration tube routing provisions at the top of the bag as well as on the shoulder straps. A unique feature is that the TRIAB 18's large main compartment is accessed through the bottom, requiring the user to set the bag down to open it up completely. For those who like access to the entire interior of the bag this is a good thing since, when unzipped, it opens up completely. It has MOLLE on the front and sides and has plenty of hidden zippered compartments throughout.

**Pros:**

- › Modularity up the yin-yang
- › Hidden compartments galore
- › Sling bag that can be converted into a two-strap backpack

**Cons:**

- › Access to main compartment is only through the bottom
- › No reservoir included (it's shown here for demonstration purposes)



Reservoir not included





# Black Diamond Nitro 22 Pack

## HYDRATION PACK



### DIMENSIONS

19 x 10 x 7.5 inches



### WEIGHT

2 pounds



### COLORWAY

Moroccan Blue (shown), Deep Torch, Black



### MSRP

\$120



### URL

[www.blackdiamondequipment.com](http://www.blackdiamondequipment.com)



### NOTES

The Nitro 22 is a highly capable daypack with an external-access hydration sleeve that can accommodate reservoirs of varying sizes. Its right shoulder strap is fitted with several elasticized bands that are great for routing your reservoir's hydration tube. As its name suggests, it can fit 22 liters worth of gear and has plenty of pockets and compartments with which to do it. It's outfitted with a breathable backpanel and Black Diamond's reACTIV suspension to keep your back, arms, and shoulders cool and comfortable. The pack comes in two sizes to better fit the user for optimal long-term carry comfort. Zippered panels provide easy access to gear, while front, side, and hipbelt stretch pockets house need-to-reach essentials. A larger, 26-liter size of the Nitro is also available for those who need even more carrying capacity.

### Pros:

- › Good hydration management
- › Zippered pocket on hip belt

### Cons:

- › Hip belt is not removable
- › No reservoir included (it's shown here for demonstration purposes)



Reservoir not included





## CamelBak Rim Runner 22

### HYDRATION PACK



#### DIMENSIONS

19.25 x 12.62 x 10.43 inches



#### WEIGHT

2 pounds, 1 ounce (with reservoir)



#### COLORWAY

Fallen Rock/Orchid Orange (shown), Sienna Red/Gun-metal, Charcoal/Chili Pepper



#### MSRP

\$100



#### URL

shop.camelbak.com



#### NOTES

The Rim Runner is a good example of what CamelBak does best — make products with hydration as its central focus. This pack comes with its fantastic 3-liter capacity Antidote Reservoir, which also includes a quick-detachable hydration tube and bite valve. A zippered compartment at the rear of the pack has mounting points for the reservoir. Purpose-built tube routing hardware and straps keep the hydration tube neatly stored until needed. The Rim Runner's generous main compartment is accessed via an asymmetrical zipper that enables easy access and prevents cargo from spilling out when fully open. There is also a front organizer pocket for small items, two gear loops, and stretch mesh side pockets. A removable stability waist belt and four-point compression straps will keep your pack stable under any load. A CamelBak Air Channel back panel features center-channel ventilation and wicking mesh pods will keep you cool even on difficult terrain.

#### Pros:

- › Comes with reservoir
- › Easy access to compartments
- › Good hydration management

#### Cons:

- › It's hard to come up with a con for this pack





# Elite Survival Systems Pulse - 24-Hour Backpack

## HYDRATION PACK



### DIMENSIONS

19 x 11 x 8 inches



### WEIGHT

3 pound, 12 ounces



### COLORWAY

Coyote Tan (shown), Black



### MSRP

\$160 (\$180 with 3L reservoir)



### URL

[www.elitesurvival.com](http://www.elitesurvival.com)



### NOTES

Elite Survival System's Pulse is a feature-rich, hydration-ready pack that is constructed of 1,000-denier nylon and incorporates heavy-duty zippers that feature covered zipper chains to help prevent moisture seepage. The two rear-most compartments can both accommodate 3-liter hydration reservoirs with a simultaneous tube-routing system, giving you a total capacity of 6 liters of water. Its Hydrapak reservoirs are sold as add-ons to this pack for \$20 each. It has three large, padded primary compartments with compression straps, and ample room for gear. Because liquids and gear can be heavy, a vented back panel is stiffened with an internal, aluminum spine to provide consistent support, added stability, and reduce load strain. A low-profile laser-cut PALS panel allows for plenty of customization opportunities and the paracord handle carry handle is quick detachable.

### Pros:

- › Large
- › Rugged
- › Plenty of organizational space
- › Quick-detach paracord handle

### Cons:

- › Somewhat heavy
- › The hydration compartment is a little undersized










# Condor Outdoor Solveig Assault Pack

## HYDRATION PACK



	<b>DIMENSIONS</b> 20 x 11 x 6 inches
	<b>WEIGHT</b> 3 pounds, 3 ounces
	<b>COLORWAY</b> Tan (shown), Black, Olive Drab
	<b>MSRP</b> \$95
	<b>URL</b> <a href="http://www.condoroutdoor.com">www.condoroutdoor.com</a>

**NOTES**

The Condor Solveig was originally conceived as a discreet assault pack and is jammed full of features. It has a padded pocket inside the main compartment that can be home to a hydration reservoir or a laptop. It has several hanger tabs to help secure the reservoir in place as well as a port for routing a hydration tube. At the back of the pack is a new airflow system for additional comfort and a drag handle that's reinforced with Hypalon for easier grip and durability. Its internal compartmentalization allows for plenty of organized storage space.

### Pros:

- › Rugged
- › Wide mouth opening for interior
- › Many options for add-ons

### Cons:

- › Hydration compartment is small
- › No reservoir included (it's shown here for demonstration purposes)



Reservoir not included



# Grey Ghost Gear Stealth Operator Pack

## HYDRATION PACK



### DIMENSIONS

17 x 9 x 4 inches



### WEIGHT

1 pound, 5 ounces



### COLORWAY

14 colorways including, Kryptek Yeti (shown)



### MSRP

\$109



### URL

[www.greyghostgear.com](http://www.greyghostgear.com)



### NOTES

Grey Ghost Gear's Stealth Operator Pack is designed to blend into the crowd. The pack features a hydration pocket big enough to swallow up a 3-liter reservoir. Its main compartment has covered mesh compartments to keep smaller items in place. A center zip accessory pocket is easily accessible and contains admin and organizational pockets as well as a concealed holster to covertly carry a handgun. It also features a water-resistant coating on the backside of the fabric and a water-repellant coating on the face to keep everything inside dry. Heavy-duty zippers, grab handle, and a sternum strap round out this useful pack.

### Pros:

- › Easy-to-access front and main compartments
- › Organized interior
- › Lightweight

### Cons:

- › Bladder compartment is small, not very deep
- › No reservoir included (it's shown here for demonstration purposes)



Reservoir not included





## Tactical Tailor Removable Operator Pack

### HYDRATION PACK


**DIMENSIONS**

16.5 x 10 x 7 inches


**WEIGHT**

2 pounds, 3 ounces


**COLORWAY**

7 colors including Foliage Green (shown)


**MSRP**

\$115 (as shown) to \$135


**URL**

[www.tacticaltailor.com](http://www.tacticaltailor.com)


**NOTES**

The Removable Operator Pack is designed as a quick attach assault pack that attaches directly to Tactical Tailor's line of modular vests or larger packs. Think of it as a backpack for a backpack that can be used by itself. A separate hydration pocket accepts 2- or 3-liter bladders. Its shoulder straps have elastic straps that keep the hydration tube from flailing about. The Removable Operator Pack also features a large main compartment that is lined with high-visibility orange. This feature is nice to have in case you need to be seen by rescuers — and it makes it easier to find objects in its interior. For small items, a side entry front pocket is easy to get to. Because this can act as an add-on pack to larger packs, all hardware needed to attach the pack to other gear is also included.

**Pros:**

- › Quality workmanship
- › Bright interior is a good emergency signal

**Cons:**

- › Overall size is limiting
- › No reservoir included (it's shown here for demonstration purposes)



Reservoir not included



INTRODUCING THE **NEWEST** MEMBER OF  
THE WORLD'S FIRST & FINEST WRISTLIGHTS

# 2211<sup>®</sup>X



Pairs perfectly with your  
CCW or duty pistol



MaxVision Beam™ provides  
crucial illumination  
for threat identification.

The rugged, powerful 2211X is the newest member of the groundbreaking 2211 family. It features a lightweight polymer body and a faceted reflector that shapes its LED-generated light into a broad MaxVision Beam™ powered by just one 123A battery. Like all 2211s, it's always accessible and features a one-touch max-output switch to unleash all 300 lumens in an instant. You can also select long-runtime low-output settings for non-tactical uses. It's the most affordable WristLight ever, and it's only from SureFire.



MSRP: \$169

[surefire.com/2211X](http://surefire.com/2211X)

**SUREFIRE**

# WE ARE FREEDOM

RELIABLE

ACCURATE

AFFORDABLE

PERFORMANCE



.380 ACP



9 MM



.40 S&W



.223



300 Blk



.308

Text 123ammo  
to 33444 to receive  
special pricing offers



[FreedomMunitions.com](http://FreedomMunitions.com)

FREEDOM MUNITIONS





# SEAL IT

## The Many Uses of Vacuum Sealers

Story and Photos by Steven Kuo



Late night infomercials either suck you in or result in lost credibility. They do tend to be very effective for products that need a more detailed explanation or benefit from demonstrations. At some point, you may have seen an infomercial about a vacuum sealer. It might have been full of hyperbole with a host sporting a cool accent and a studio audience stocked with people who would probably give a standing ovation to a small poodle lazily licking himself.

As any hunters in our readership probably already know, don't let any of those negative associations sway you — vacuum sealers are truly handy and useful appliances.

## Air Is Life

Remember that periodic table you had to memorize back in grade school? The eighth element, oxygen, is highly reactive and easily forms compounds with other elements (e.g. oxides such as rust). It's generated by photosynthesis, and without it, we would all asphyxiate and die.

But exposure to air — and the O<sub>2</sub> that comprises 21 percent of it — has all sorts of deleterious side effects. It can, for instance, cause food to spoil. The presence of oxygen allows for the growth of bacteria and mold; we've all seen this with leftovers in the back of the fridge that we forgot about. Food also contains certain enzymes (oxidizing enzymes) that lead to spoilage when exposed to O<sub>2</sub> — if you've ever left some vegetables out on the counter, the browning that you see is an example of this. And when fats become rancid? That's from oxidation, just simply from exposure to oxygen.

A Natural Resources Defense Council research report estimated that America wastes a staggering \$165 billion's worth of food each year, from the farm to your fork. At a household level, a typical family of four is estimated to waste approximately \$1,350 to \$2,275 of food each year. That's a lot of meals, no matter how you slice it.

Vacuum sealing is the process of packaging items in a plastic bag or container, removing air from within, and sealing it closed. You end up with an airtight, watertight, vacuum-packed item. Think about that — it's not just foods that can benefit from those properties. You can inhibit metals from rusting and silver from tarnishing. You can waterproof documents or other important items. You can prevent evaporation. A vacuum-packed item also gets compressed and takes up less space.

So, it goes without saying that a vacuum sealer can be a great tool for the prepared individual.

## How Does It Work?

Fundamentally, vacuum sealers need to do two things: evacuate air and seal the package. There are two primary methods to create the vacuum. The first is to place one open end of a plastic pouch into the sealer, which sucks air out of the package. The other is to place the entire package inside a large chamber from which air is removed. The former is known as an external sealer, and the latter a vacuum chamber sealer.

A typical external sealer clamps down on the open end of the plastic pouch, encasing just the end within a rectangular or oval vacuum chamber while the rest of the bag sits outside of the machine. In the chamber, there's a vacuum port through which the pump extracts air. Once all the air has been extracted, a heat sealing bar melts the plastic to seal



the pouch. Note that since the sealer is pulling air out of the pouch, liquids or powders may get sucked out, compromising the seal and potentially damaging the machine.

Chamber sealers, on the other hand, have a large compartment that engulfs the entire bag to be vacuum packed. Air is then removed from the entire vacuum chamber, rather than sucking air out of the bag itself. As a result, they're very effective and there's no issue with soups, sauces, and powders. However, chamber sealers are large, heavy, and very costly, so they're most commonly found in commercial and industrial applications. Therefore, we focus on external sealers in this article.

Bags made for vacuum sealers can come in various guises. Pouches, open on just one end, come in a variety of different sizes. Rolls are open on both ends — you cut a piece to the exact length that you need, seal one end, then insert your items and vacuum and seal the other end.



A dizzying array of pouches and bags are available for purchase. Rolls are sealed on the sides and open on the ends, so that you can cut them exactly to size — 11 inches is the most common width. Pouches come in a variety of different sizes, sealed on three sides and open on one end, again usually limited to 11 inch for most sealers. Manufacturers recommend that you use their own products, but we successfully mixed and matched between FoodSaver and Weston. Your mileage may vary with other suppliers, so best to try a few before buying in bulk. You can also get specialty bags, such as easy-to-access zipper bags, to go with specific sealer systems. <





Here's some quail from a hunting trip almost two years ago that we found in the bottom of the freezer. Using a regular freezer bag has resulted in freezer burn.

Zipper bags include a zip-lock style opening to make frequent access more convenient. Bags designed to be used with external sealers have special embossed interiors to help extract air from them; the texturing creates tiny channels for the air to be sucked out by the sealer, whereas two smooth surfaces might create a seal prematurely before all the air has been removed. However, because the pouch collapses and shrinks around the contents, delicate items can get crushed and sharp items might puncture the bag. Bags and rolls are available in various thicknesses, typically 3 to 4 mil. Some can be boiled, some not. Be sure to get bags with the characteristics you need for your application.

Many sealers have an accessory port to connect a hose to the vacuum pump. This allows you to remove air from various other accessories, from special canisters to mason jar sealers to bottle stoppers.

Accessories such as canisters from Weston (\$13 for 1.5-quart and \$17 for 2-quart sizes) and containers from FoodSaver (\$13) provide convenient storage for frequently accessed and delicate items.



## Seal Your Eats

Vacuum sealers can help you avoid freezer burn, wilted and spoiled food, mold, and a stale snack or dinner. Savings from reducing your food waste by itself might seal the deal for you. But there are many more benefits, especially for those focused on preparedness.

You can enjoy the cost savings of purchasing food supplies in bulk, vacuum sealing portions of it to use over time. The prolonged shelf life of your vacuum-sealed food would serve you well in extended emergency situations, not to mention protecting your supplies from creepy crawly things. For example, pasta, grains, and nuts that might normally be good for six months can instead last one-and-a-half to two years. Meat or vegetables that might only go six to eight months in the freezer without getting freezer burn can remain fresh for several years. Of course, perishable food still needs to be refrigerated or frozen. You can't vacuum seal a raw chicken thigh and just throw it in your pantry. Also, remember that vacuum sealing isn't equivalent to canning either.

In Issue 9, we featured an article about building a six-month food supply — a vacuum sealer would be a great tool to help you effectively package your supplies for storage.

Here are some tips for vacuum sealing food:

► **Don't Stuff the Bag Like Santa Claus:** Leave several inches of space at the open end, and be sure to carefully clean the open end, to ensure the machine can get a good heat seal. If you want to be able to open and reseal the same bag with its contents one or more times, leave even more extra space and trim off just enough of the bag when you open it. Straighten and smooth out the bag as much as you can when placing it in your sealer.

► **Get Frosty:** While many sealers tout a "moist" mode, drip pans, and other features to deal with wet items, your best bet will be to par-freeze them before vacuum sealing them in a bag. That means putting the items in the freezer just long enough for them to solidify, perhaps one to two hours. With items that aren't too moist, placing a paper towel in the pouch between the items and the open end works — just seal the paper towel in with your goodies.

► **Be Berry Careful:** Soft or fragile foods like berries, cookies, pastries, and breads will get crushed during the sealing process. Par-freeze them as well before sealing to prevent this. The best way to do this with items like berries is to spread them out on a cookie sheet so they're not touching. If you allow them to clump up in a frozen block, air pockets may form and interfere with the vacuum seal.

► **Paper-Towel Wrap:** Dried foods with sharp edges like pasta and nuts can be wrapped in a paper towel to prevent

punctures. A paper towel will also stop shredded cheese from being sucked out during the sealing process.

› **Bag the Bag:** For powdery or grainy substances, you can leave them in their original bag before sealing it inside a pouch.

› **De-enzyme Your Veggies:** We discussed how enzymes in vegetables lead to browning and loss of flavor. Blanching vegetables prevents this and is your first step before vacuum sealing them. Briefly boil the vegetables, then immerse them in cold water. After drying them off, seal them up.

Sealers can also help with cooking. You can use a canister accessory to marinate meat – the vacuum helps the meat absorb your marinade way quicker than normal. If you like to cook using the sous-vide method, where food is slowly cooked in a temperature-regulated water bath, a vacuum sealer is a must to bag your items. You can also prep meals (either fully or partially) on the weekend and vacuum seal them to make it quicker and easier to make lunch or dinner during the week when you're pressed for time.

Just like your guns or other tools, take care of your vacuum sealer. Keep it clean and maintain it as per the manufacturer's instructions.

## Not Just Food

Just like your buddy at college who got an electric deep fryer and started deep frying everything in sight, when you get a new vacuum sealer you'll feel an urge to vacuum pack anything within reach. In fact, any items that you wish to protect from oxidation, moisture, and corrosion is fair game. Here are just a few useful applications beyond food supplies:

- › Store guns and ammunition, safe from corrosion
- › Protect key survival gear that you plan to cache for later use
- › Preserve currency (cash, precious metals, etc.) or barter goods for your cache
- › Keep matches and tinder dry and ready for use
- › Shield first-aid supplies from dirt, moisture, or contamination
- › Safeguard important documents. (Note that having a manual or pulse mode will be useful for sealing delicate items like documents.)
- › Store personal items that will become "luxuries" after SHTF, like cigarettes or your favorite book

The list of applications is limited only by your imagination. Vacuum sealers are truly useful tools. So, with this in mind, we've listed on the following pages a representative sample of various types of vacuum sealers.

## \$ BUYER'S GUIDE

### VACUUM SEALERS

FoodSaver  
FM-2100



	<b>DIMENSIONS</b>
	17 x 9 x 4 inches
	<b>WEIGHT</b>
	5.23 pounds
	<b>MAX BAG WIDTH</b>
	11 inches
	<b>MSRP</b>
	\$120
	<b>URL</b>
	<a href="http://www.foodsaver.com">www.foodsaver.com</a>

**NOTES**  
FoodSaver is the most widely recognized vacuum sealer brand, having played a large part in popularizing vacuum sealers for home use. If you haven't seen one of their infomercials, then you clearly haven't enjoyed the wonders of insomnia. Given their long history of building products for the consumer market, they've refined their sealers with convenient and compact designs, handy features, and strong price/performance. FoodSaver offers a line of sealers from basic to full featured, and we were able to purchase the FM-2100 model shown here for just \$60 on sale at Costco. Yet it still has a host of features, including dry and moist modes, built-in roll storage and cutter, removable drip tray, and a hose accessory. And it packs away nicely in a kitchen cupboard. With the versatility to use rolls, pouches, zippered bags, canisters, and other accessories, this FoodSaver is a great value and a perfect entry point to the world of vacuum sealing.



## Weston Harvest Guard Portable Vacuum Sealer

### VACUUM SEALERS



**DIMENSIONS**  
15.6 x 7 x 3.75 inches

**WEIGHT**  
4.5 pounds

**MAX BAG WIDTH**  
11 inches

**MSRP**  
\$150

**URL**  
[www.westonsupply.com](http://www.westonsupply.com)

**NOTES**  
Weston's Harvest Guard portable vacuum sealer is more powerful than it might look. Compact and light, it's designed to be used anywhere — at home, on the road, or in the field. With its 12-volt adapter, you can rock your sealer virtually anywhere. Its heat sealer is adjustable to optimize for the bags you're using, and it has a pulse mode so you can manually control the vacuum process for delicate items or liquids. Despite its size and portability, it was nearly as quick as the Weston Pro 1100 model. It has an accessory port — we found it a bit loose on our test unit, but it worked fine. The Harvest Guard accepts rolls and bags up to 11 inches wide, but doesn't have a cutting tool. It has a carrying handle, and the power cord tucks underneath. There's no storage spot for the 12-volt adapter, so you'll need to stash it somewhere else when on the move.

## Oliso VS-97A

### VACUUM SEALERS



**DIMENSIONS**  
8.3 x 6.8 x 4.1 inches

**WEIGHT**  
2.5 pounds

**MAX BAG WIDTH**  
N/A

**MSRP**  
\$200

**URL**  
[www.oliso.com](http://www.oliso.com)

**NOTES**  
The Oliso features a very clever design in a compact and modern package that would look at home in your granite-encrusted fantasy kitchen. Rather than having a vacuum chamber that pulls air out of the open end of a bag, the Oliso punctures an enclosed zippered bag, evacuates the air, and creates a circular seal around the puncture. Essentially, it's like having a Ziploc bag that you can open and close, filling it up with your items and easily vacuum sealing it when you wish. The downsides are that you're limited to using Oliso's bags, in the dimensions that they offer, and that the Oliso chalked up the longest processing times in our testing — substantially longer than the others. That being said, the Oliso bristles with features, including dry and moist modes, an accessory port, and a 12-volt adapter. It's also incredibly simple to use. Just slide the pouch into the machine and it starts automatically; no fussing about with straightening and lining up the bag while trying to close the cover.

## Weston Pro 1100

### VACUUM SEALERS



#### DIMENSIONS

15.9 x 12.5 (14.6 with roll holder)  
x 6.5 inches



#### WEIGHT

15.6 pounds



#### MAX BAG WIDTH

11 inches



#### MSRP

\$300



#### URL

[www.westonsupply.com](http://www.westonsupply.com)



#### NOTES

Weston's Pro line of sealers are gleaming stainless steel industrial tools in a sea of plastic kitchen appliances. The Pro 1100 and its big brother feature sturdy stainless steel construction and cooling fans for their hearty vacuum pumps. The Pro 1100 makes concessions to consumer convenience, featuring a pulse mode, manual seal, seal time adjustment, an accessory port to connect a hose for canisters and other containers, and a roll holder and cutter. But in keeping with the industrial theme, this sealer proudly shoulders its roll in plain view on pieces of steel bolted onto its case. Jonathan Ive would have a cow. We love it; this is serious hardware if you have the budget.

## Weston Pro 2300

### VACUUM SEALERS



#### DIMENSIONS

19.6 x 13.8 x 5.9 inches



#### WEIGHT

22.3 pounds



#### MAX BAG WIDTH

15 inches



#### MSRP

\$500



#### URL

[www.westonsupply.com](http://www.westonsupply.com)



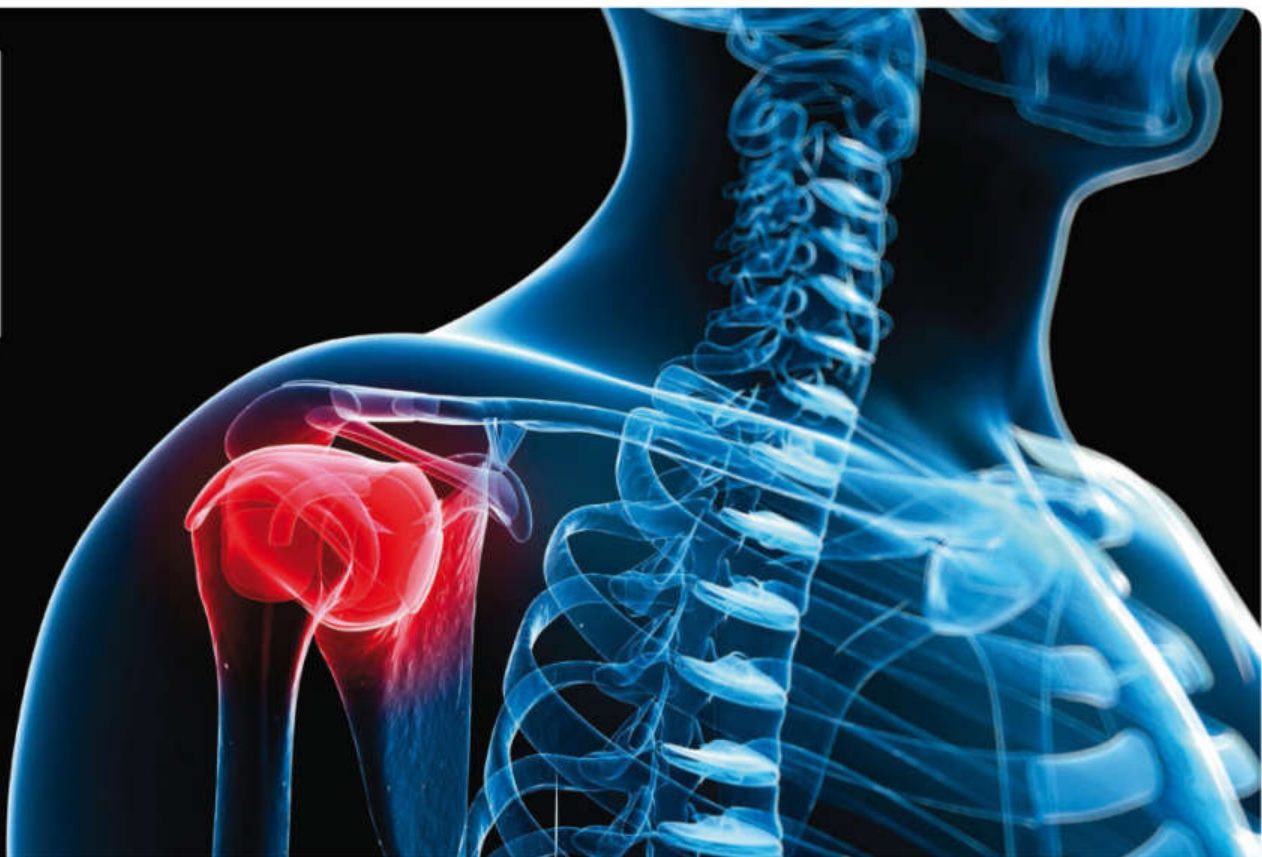
#### NOTES

The Pro 2300 is the honey badger of this bunch. It doesn't care about accessories, different modes, adjustments, built-in roll cutters, or any fancy conveniences except delivering rapid, skull-crushing vacuum seals, time after time, all day long. It only has three buttons. If you're a big-game hunter and just took something that will offend strangers on Twitter and Facebook, take a look at this 22-pound sealer and its extended vacuum chamber that accommodates 15-inch-wide bags and rolls. The clear cover allows you to watch the fun, but don't blink because the Pro 2300, not surprisingly, was the fastest sealer we tested. If you need a Ferrari of a sealer to process your harvested honey badgers, this is the one to get.



**WARNING!**

The exercises and content expressed in this column are for illustrative purposes only. Consult a medical professional before trying any physical activity or nutritional plan.



Eraxion/istockphoto.com

# CASE THE JOINT

## Where Is Your Pain Coming From?

Story by Ryne Gioviano



People tend to think that all they need to do is pop a pill (of both the medicinal and supplemental kind) and their joints will be perfectly fine. What they don't realize is that the first step in joint health is to stay active, a key component in preventing injuries and also alleviating past pains.

You might be asking, "What does joint pain have to do with prepping?" Sure, it's easy to focus on working on bushcraft or testing out your latest bug-out bag. But how will you worry about any of that if you've blown out your knee while fleeing the initial catastrophe? Prepping also includes preparing and repairing the hardware you were born with, not just the ones you buy at the army surplus store. So, how can a prepper do this?

### Body

Let's say your knee starts giving you trouble. You figure it's just the awkward way you hopped over the fallen tree while lugging your gear to the next safe zone. It'll go away in a day or two, you tell yourself. Well, when it still persists days or weeks later, maybe something else is going on. The problem is, it's far too common to think that knee pain equates to a knee problem. Most of the time, it's not your knee. Just because you feel pain there doesn't mean that it's the source of your problem.

Your whole body moves through an interconnected series of joints — some of which need to be more stable, while others need to be more mobile. In simplified terms, your shoulder and hips need to be mobile, while your lower back and knees need to be more stable. When you don't have enough stability or mobility in these joints, other areas need to pick up the slack. This extra slack is what we're looking to eliminate. Sometimes, it can lead to debilitating back pain or a painful shoulder. Let's take a look at some tests and corrective exercises to fix your ailing joints.

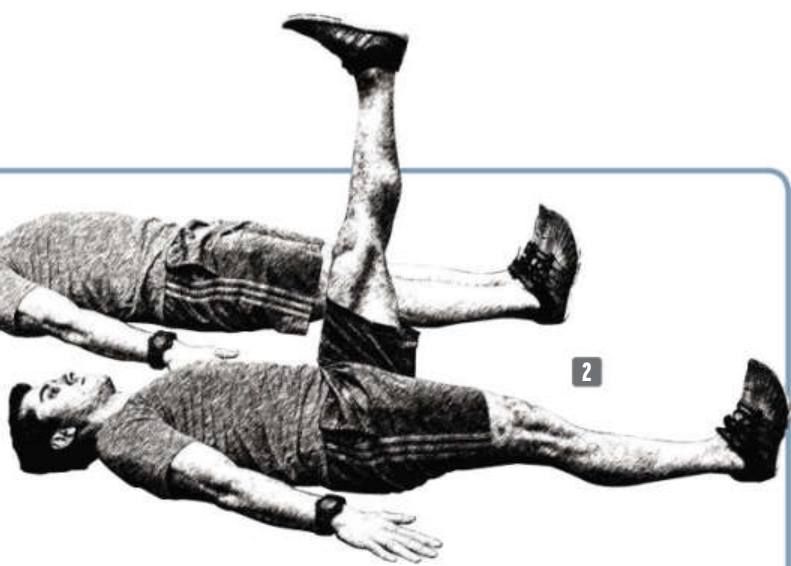
## Self-Tests

Complete the following self-tests to determine which areas of your body need further work.



### 1 Shoulder: Apley Scratch Test

To test range of motion of the shoulder, we're going to use the Apley Scratch Test. To do this, reach behind your head to touch the upper part of your opposite side shoulder blade. Then, reach behind your back to touch the lower part of the opposite side shoulder blade. If you can't reach your shoulder blade, this is an area on which to focus.



### 2 Hip and Lower Back: Straight-Leg Raise

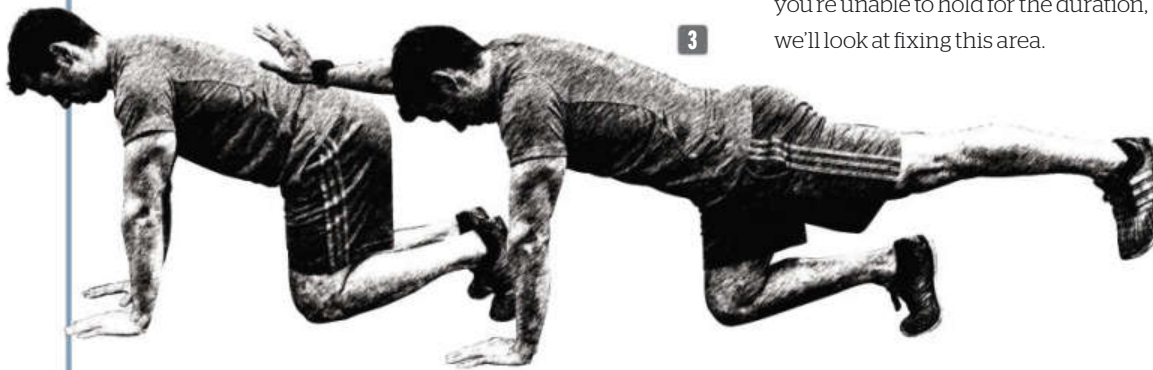
Begin lying on your back with your feet together and toes up, arms out to your sides with palms down. Lie next to a stationary object, such as the end of a wall, at the middle of your thigh.

Keeping both legs straight, raise the leg closest to the wall as high as you can. Do this test on both sides. If you're unable to raise your leg at the same level or higher than the wall, you'll need to focus on this.



### 3 Lower Back: Bird Dog

Begin on the ground on all fours. Simultaneously, reach your right arm forward and stretch your left leg backwards. Try to make yourself as long as possible and hold for 20 seconds on each side. If you're unable to hold for the duration, we'll look at fixing this area.



### 4 Knee, Hip, Lower Back, and Shoulder: Overhead Squat

Begin standing 6 inches in front of a doorway. Your feet should be hip-width apart with your toes pointed forward. Hold a dowel or broomstick overhead with your hands, about twice your shoulder width apart. Keep your arms as straight and vertical as possible.

Keeping your heels flat on the floor and your toes straight ahead, squat down as deeply as possible. Your hips should be able to get below your knees, with your toes staying straight ahead, and you shouldn't touch anything on the way down or up.



### 5 Knee: Wall Ankle Mobilization

Begin by standing and facing a wall with one foot about 4 inches away from the wall. Place your hands on the wall. Keeping your heel on the floor, move your knee forward to reach the wall with your knee. If you're unable to reach the wall, there's a restriction we'll need to address.



### 6 Knee and Hip: Hurdle Step

Begin by placing a piece of tape across a door frame just beneath the height of your knee. Stand directly in front of the tape. Raise one leg up and over the tape, and place your heel on the ground in front. Bring the same leg back over and return to the starting position. If you make contact with the tape during this process, this will be an area we'll focus on improving.



## Corrective Exercises

Once you've determined which areas of your body you need to address, focus on the following corrective exercises.

### Shoulders

The shoulder is a structurally unstable joint. Unlike your hip, which has a much deeper socket, your shoulder joint resembles a golf ball on a tee. The key to keeping your shoulders healthy involves keeping your rotator cuff strong, your shoulder blades stable, and your spine mobile in the area between your shoulder blades (thoracic spine).

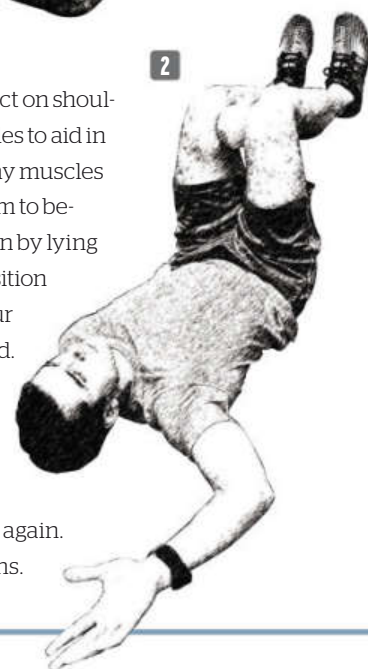
### 1 Quadruped Extension/Rotation

Begin down on all fours and rock back, slightly arching your lower back. Place one hand behind your head. Start by rotating down and bring your elbow toward your opposite knee. Then, rotate your elbow up toward the ceiling. Follow your elbow with your eyes. Complete two sets of 10 repetitions per side.



### 2 90/90 Hip Lift With Breathing

Improper breathing can have a huge impact on shoulder function. If you're recruiting larger muscles to aid in breathing, this will cause the overuse of many muscles of the shoulder and upper body, causing them to become very tight and restrict movement. Begin by lying on your back with your feet flat on a wall. Position yourself so there are 90-degree angles at your hips and knees, with your right arm overhead. Breathe in through your nose, and as you exhale, pull down through your heels to curl only your hips off the floor. Hold this position as you breathe all of your air out and pause for three seconds, before inhaling again. Complete four to five sets of four to five breaths.

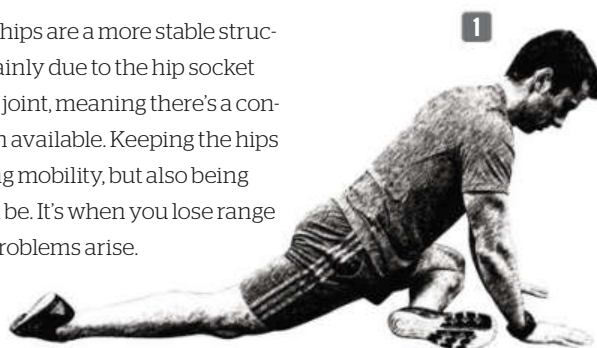


# Hips

As explained earlier, the hips are a more stable structure than the shoulders, mainly due to the hip socket depth. It's a ball-and-socket joint, meaning there's a considerable amount of motion available. Keeping the hips healthy is all about retaining mobility, but also being able to stabilize when need be. It's when you lose range of motion or stability that problems arise.

## 1 Hip Rotator Stretch

Begin in a push-up position and bring one knee forward. Rotate that leg outward, bringing your front shin perpendicular to your body. Slowly lower yourself down, relaxing into the stretched hip. Focus on breathing slowly and deeply, trying to deepen the stretch throughout the time frame. Complete one set of 40 to 60 seconds on each side.



## 2 Single-Leg Romanian Deadlift

Begin in a standing position. Simultaneously reach both arms forward and stretch your other leg far back behind you. Push your planted foot through the floor to return to the starting position. Complete three sets of eight repetitions per side.

## 3 All Fours Glute Mobilization

Start in an all fours position. Place one foot behind the opposite knee. Slowly rock your hips back and to the rotated side. Complete one set of eight repetitions per side.

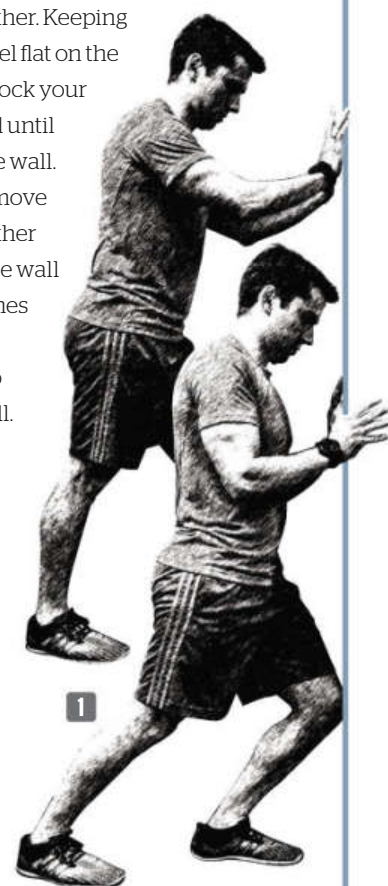


# Knees

The knee is commonly referred to as a dumb joint because it's mainly a product of the hip and ankle. It lies between these two joints, both of which should be highly mobile. The knee primarily bends and straightens, so you need the hip and ankle to be mobile enough to move through their full range of motion, but also stable enough to resist any motion that would put the knee in jeopardy. Therefore, it's key to focus on the hip and ankle when keeping knees healthy and pain-free. Work on the hip mobility exercises described earlier, as well as the following exercises.

## 1 Wall Ankle Mobilization

Begin standing and facing a wall. Place your hands on the wall, and put one foot in front of the other. Keeping your front heel flat on the floor, slowly rock your knee forward until you reach the wall. Continue to move your foot further away from the wall until it becomes difficult but achievable to reach the wall. Complete two sets of 10 repetitions per side.





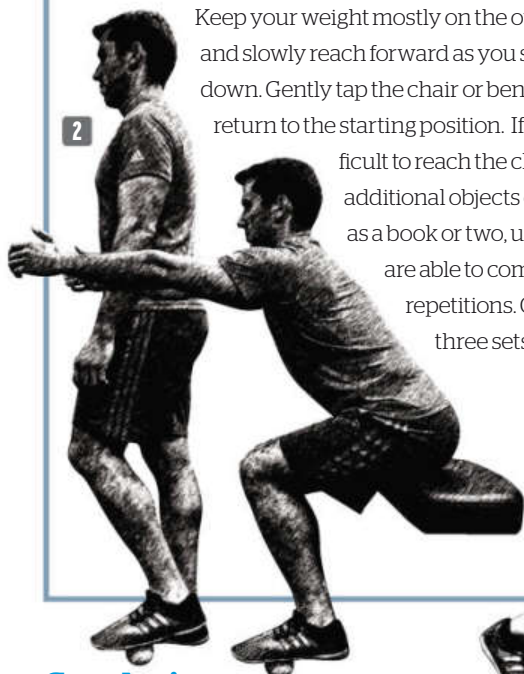
**Knees** (continued)**2 Single-Leg Squat With Tennis Ball**

Begin standing about a foot in front of a chair or bench.

Place a tennis ball under the ball of one foot.

Keep your weight mostly on the other foot, and slowly reach forward as you sit back and down. Gently tap the chair or bench, then return to the starting position. If it's too dif-

ficult to reach the chair, place additional objects on it, such as a book or two, until you are able to complete eight repetitions. Complete three sets per side.

**Conclusion**

The bottom line is that rarely is an issue in one joint isolated to that particular joint. Most often, it's the surrounding joints – or even more distant joints – that have a significant impact on how well it functions. Oftentimes, you can help yourself overcome aches and pains simply by knowing how to take care of yourself. Self care is one of the best assurances to provide maximum advantage when disaster strikes. So learn what you need to do to become more durable and to take care of yourself and others when crap starts hitting the fan. ❧

**SOURCES**

*Athletic Body In Balance* > [www.humankinetics.com](http://www.humankinetics.com)

*Movement: Functional Movement Systems* > [www.otpbbooks.com](http://www.otpbbooks.com)

**About The Author:**

A frequent RECOIL OFFGRID contributor, Ryne Gioviano is the co-owner of Welligee Personal Training & Lifestyle located in Naperville, Illinois. He holds a master's degree in exercise physiology and is certified through the National Strength and Conditioning Association.

➔ [www.welligee.com](http://www.welligee.com)

**Corrective Exercises**

(continued)

**Lower Back**

Who hasn't had lower back pain at some point? Unfortunately, it's far too prevalent. The lower back is an area that needs a lot of stability. Not only does that area of the spine allow much less movement, it's also where force gets transferred between the upper and lower body. If there isn't adequate stability, you won't be able to transfer force very well, and you'll probably have some pain.

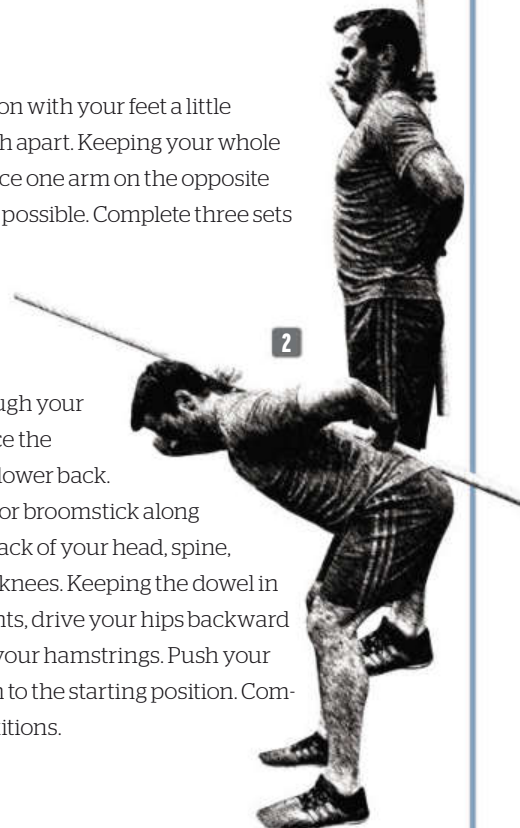
Much like the other joints we've discussed, the lower back will have to make up for any mobility that's lacking in the surrounding joints. We're specifically talking about your hips, shoulders, and middle spine segment (thoracic spine). To address these areas, work on the shoulder and hip mobility exercises outlined above, as well as the following exercises.

**1 Straight-Arm Plank With Shoulder Tap**

Begin in push-up position with your feet a little wider than shoulder-width apart. Keeping your whole body rigid, alternately place one arm on the opposite shoulder. Move as little as possible. Complete three sets of 30 seconds.

**2 Hip Hinge with Dowel**

Learning to move through your hips can drastically reduce the amount of strain on your lower back. Begin by holding a dowel or broomstick along your back, touching the back of your head, spine, and tailbone. Soften your knees. Keeping the dowel in contact with all three points, drive your hips backward until you feel a stretch in your hamstrings. Push your feet into the floor to return to the starting position. Complete three sets of 10 repetitions.







# PREPARE TO SURVIVE ANYWHERE

## LifeStraw® PERSONAL WATER FILTER

- Removes 99.9999% waterborne bacteria & 99.9% waterborne protozoa
- 0.2 Micron hollow fiber membrane filter rated to 264 gallons, weighs only 2 oz.
- Sales support LifeStraw donations in developing countries

[buylifestraw.com](http://buylifestraw.com)

1-888-451-6752

# THE ONLY MONTHLY SUBSCRIPTION THAT COULD KEEP YOU ALIVE!

CHOOSE FROM 4 DIFFERENT LEVELS  
BASIC, ADVANCED, PRO, OR KNIFE OF THE MONTH!

KNIVES, SURVIVAL TOOLS, TACTICAL GEAR, & MORE!

**BATTLEBOX™**  
SURVIVAL & TACTICAL GEAR  
DELIVERED MONTHLY



USE OFFGRIDTEN FOR 10% OFF FIRST ORDER

SUBSCRIBE TO SURVIVE AT  
[WWW.BATTLEBOX.COM](http://WWW.BATTLEBOX.COM)



# BUG-OUT BRACELET

Reviewing Superesse Straps' 28-in-1 BOB Pro

Story and Photos by Patrick McCarthy

It's often said that good things come in small packages, and this is never truer than in a survival scenario. Although it's always wise to have a 72-hour bug-out bag and a fully stocked pantry at your disposal, lugging around a 60-pound backpack 24/7/365 is essentially impossible. When SHTF, if something isn't on your person and easily accessible, the odds are high that it's going to get lost, stolen, or simply left behind.

This line of reasoning led one former military serviceman and current law enforcement officer to create Superesse Straps and the Bug-Out Bracelet Pro. While serving for more than a decade in the U.S. Army Special Operations Command, he began crafting simple paracord bracelets as a way to pass the time and boost morale for his team. Over the years, the idea expanded

## SUPERESSE STRAPS Bug-Out Bracelet Pro

to incorporate various tools into the bracelets – items that could prove invaluable to any military operator, survivalist, or outdoor adventurer.

After returning from deployment overseas and sharing photos of some of his creations on social media, Supersesse Straps' creator began getting substantial interest in his products, and the business was formed. Now he works full-time in law enforcement, serves part-time in the U.S. Army Reserve, and produces these bracelets at home with help from his wife. Each bracelet takes up to three hours to craft, and contains a selection of over 80 possible options. Buyers can choose from a number of pre-selected packages, or order a fully customized one-of-a-kind bracelet for more specific needs.

The bracelet featured here is Supersesse Straps' top-of-the-line model, known as the Bug-Out Bracelet (BOB) Pro. It contains an impressive 28 individual tools (see a complete list in the sidebar).

But does being jam-packed equal being effective and functional? Read on to see how the bracelet fared in our hands-on test.

### The 411

The BOB Pro that we received features the standard 25-plus tools, as well as two optional extras: the navigation add-on and waterproof supply core. This brings us to a total of 28 built-in tools, nine of which can be accessed without disassembling or

**MAKE & MODEL**  
Supersesse Straps  
Bug-Out Bracelet Pro

**WRIST SIZES**  
6.75 to 8.75 inches

**# OF TOOLS INCLUDED**  
25 to 30-plus

**MSRP**  
\$125 to \$195

**URL**  
[www.supersessestraps.com](http://www.supersessestraps.com)



> Underneath the P38 can opener is a Coast Guard-approved SOLAS signal reflector.



unraveling the bracelet. So, we'll cover these nine items first, before getting into the bracelet's internal components.

Immediately noticeable on the bracelet's exterior is an impact-proof luminous compass, part of the navigation add-on package. Supersesse Straps' creator tells us he field-tested five different compasses via real-world military experience, and this is the one that got the job done every time. Also included in the navigation package is a luminous glow-light surface on the buckle, which allows for map reading in low light conditions.

Next, you'll notice the trusty P38 can-opener held in place by two elastic ranger bands. Attached to this tool is a SOLAS (Safety of Life at Sea) reflector for long-distance signaling. Another ranger band holds a live fire wick tinder strand, ideal for starting fires in damp conditions. All currently produced BOB Pro models now also contain a Kevlar Utility Thread sawing cord beneath the fourth ranger band, although our test bracelet didn't include this tool.

There's more to the buckle than meets the eye – the male half has a whistle and ferro rod, and the female half holds a white ceramic fire striker with a razor-sharp cutting edge. The aforementioned elastic ranger bands are also combustible, and can be burned for smoke signaling.

To access the remainder of the bracelet's components, you'll have to unravel the paracord and cut open the core. Once this is done, you won't be able to reassemble it yourself, but if you ever deploy your bracelet in a survival scenario,

< Starting at one end and working towards the other, the paracord is unraveled to access the bracelet's supply core. On bracelets with the waterproof option, the black rubber heat-shrink layer must be peeled away as well.





The BOB Pro is surprisingly light and compact given the number of tools it contains, and wears well without feeling cumbersome. It's also nicely built, and easily withstood everyday civilian use in our short-term testing. Unwrapping the tightly rolled duct tape core does require patience and dexterity, especially since it contains several sharp items, but the contents are laid out carefully to minimize the risk of injury.

In a market filled with \$25 paracord bracelets (and junky ones for \$5), the generously optioned BOB Pro we tested (at \$160 retail) seems wildly expensive at first blush. But as we've found when it comes to potentially life-saving gear, you don't want to cheap out. Considering the quality contents and sturdy construction, we'd say it's a solid value for the money — if you have the money to spare. The only available options our test bracelet didn't have are colored/MultiCam paracord and the Fire Cord paracord with a combustible inner wick (both of which cost extra). For those looking to spend less, Superesse Straps offers other survival bracelets priced as low as \$39.

And, of course, we also appreciate the fact that the company is veteran owned and operated, and that all of its bracelets are handmade in the USA.

As the saying goes, you get what you pay for. And with the BOB Pro, you get a lot.



# Superesse Straps BOB Pro Contents

- » Paracord Type III, 550 lb, 10 to 15 ft
  - » Nylon strands within paracord, 35 lb, 125 to 250 ft
  - » Mini curved surgical blade w/ lanyard hole
  - » Fire steel ferro rod (inside male buckle) \*
  - » Ceramic striker and blade (inside female buckle) \*
  - » Survival torch, water- and windproof
  - » Four elastic rubber ranger bands \*
  - » Jute string tinder - 1 ft, 3-ply
  - » Live fire wick tinder (under ranger band) \*
  - » UCO strike-anywhere match head
  - » Small adhesive bandage
  - » Silver metal safety pin, curved
  - » Sewing needle
  - » Two duct tape patches
  - » P38 can opener (under ranger bands) \*
  - » Two MSR water purification tablets
  - » Aluminum foil square - 5x5 in
  - » Small barbed fish hook
  - » Flexible bushman wire - 1 ft
  - » Black steel heavy-duty safety pin
  - » Steel finishing nail
  - » Shim pin/cotter pin
  - » Micro ink pen
  - » Emergency whistle (on male buckle) \*
  - » SOLAS reflective surface (on P38 can opener) \*
  - » Luminous compass, water- and impact-proof \*
  - » Luminous glow-light surface (on female buckle) \*
  - » Waterproof heat-shrink supply core
  - » Not pictured: Kevlar Utility Thread sawing cord, 30 in (under ranger band) \*
- Bonus 1: Water- and rust-proof 8-ounce storage tin*
- Bonus 2: Business card-size reference material listing bracelet contents, water purification instructions, and Morse Code signal reference guide.*
- [Note: Asterisk (\*) indicates accessibility without unraveling bracelet.]**

**[Note: Asterisk (\*) indicates accessibility without unraveling bracelet.]**





Adult Products & Novelties



Enter code  
**GRID11**  
at checkout

Take  
**50% OFF** one item  
plus  
**3 FREE** DVDs  
and  
**FREE** Shipping

**Adam & Eve®**  
adamandeve.com

Also valid at participating Adam & Eve stores.  
Certain items not available for discount.

# READY.

THERE'S NO "OR NOT."

Sometimes, seconds count. That's when it's good to have a made-in-the-USA Kershaw automatic. The CPM154 blade snaps out of the lightweight aluminum handle with authority, ready to perform when you need it.



LAUNCH 3 | 7300BLK | MADE IN USA

What are YOU carrying?



**kershaw®**

kershawknives.com



COMPLY WITH ALL LOCAL LAWS AND REGULATIONS CONCERNING AUTOMATIC KNIVES

# SWAT<sup>™</sup>

# FUEL

THE SUPPLEMENTS  
DESIGNED WITH THE  
WARRIOR IN MIND.



**9MM+P**  
ENDURANCE FORMULA

ONLY THE STRONG  
**SURVIVE**

1 BOTTLE OF 9MM+P IS  
SUPERIOR TO 30 ENERGY SHOTS  
AND WEIGHS LESS THAN 3 OUNCES!

**15% off thru**  
**Dec. 1, 2015 at**  
**SWATFuelStore.com**  
**Code: 556X45**

Also buy on **amazon.com**

As seen on





**FENIX**

**1000**  
LUMENS



**TK16**

Max 1000 Lumens

**HIGH-INTENSITY  
TACTICAL  
FLASHLIGHT WITH  
DUAL TAIL SWITCH**

- ★ Overwhelming Output and Pocket Size
- ★ Dual Tactical Tail Switch
- ★ Instant Strobe and Momentary-on Functions
- ★ Reliable Dual Layer Body
- ★ Specialized Remote Pressure Switch

[www.fenixlight.com](http://www.fenixlight.com)

Copyright Fenix. All specifications subject to change without notice.

Facebook



Being prepared *isn't* just about tools, it's about having the **RIGHT** tools. **TOPS** makes tools in America with the highest quality materials because in an uncertain world, you must have the right equipment to get you through. *Are you prepared for the unexpected?* It's your responsibility to make the right choice, and that choice is

**TOPS**

\*Knife being used is the BAJA 4.5  
visit our website for more info

[www.topsknives.com](http://www.topsknives.com)

**101%**  
Made in the  
**USA**



[facebook.com/TOPSknivesofficial](https://facebook.com/TOPSknivesofficial)

# Now Available For Home Delivery



Get RECOIL's sister publication, RECOIL OFFGRID, delivered right to your door six times a year! It's a fresh approach to urban survival and emergency preparation – with in-depth buyer's guides, honest product reviews, and survival techniques from the industry's top experts.

TO LEARN MORE

[www.offgrid-mag.com](http://www.offgrid-mag.com)

ALSO AVAILABLE ON

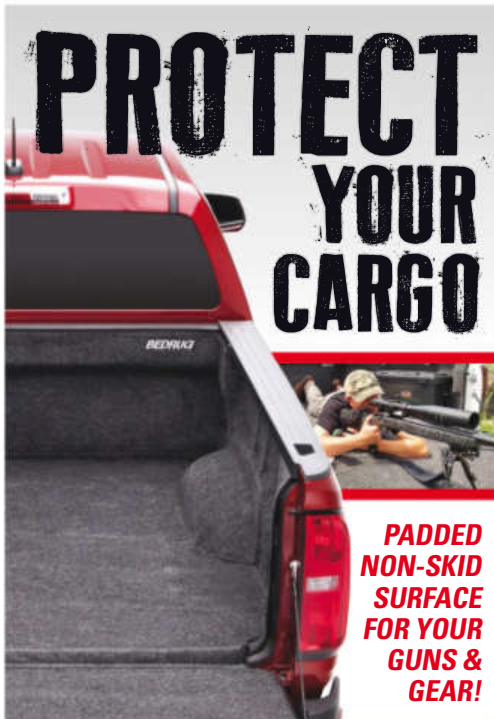


AND





# PROTECT YOUR CARGO



**PADDED  
NON-SKID  
SURFACE  
FOR YOUR  
GUNS &  
GEAR!**

## BEDRUG

NEXT GENERATION BEDLINERS

CONTACT US FOR A FREE SWATCH: 1-800-462-8435

# Serving Our Customers Since 1998



ESTABLISHED IN 1998 • CELEBRATING **16** YEARS • ESTABLISHED IN 1998

Supporting a TeleMedicine Physician Network to help treat:  
Erectile Dysfunction, Hair Loss, STD's, Weight Loss, Allergies & more.

- ✓ Lowest Prices from USA Pharmacies
- ✓ FDA-approved Genuine Brand Medications
- ✓ Call 7 days per week
- ✓ Over 550,000 Customers served since 1998



HABLAMOS ESPAÑOL **CALL TOLL FREE**  
**VIAMEDIC® 866-529-4984**  
Visit [Viamedic.com/RECOIL](http://Viamedic.com/RECOIL) for special offers



## THE T-SHIRTS OF REAL AMERICAN HEROES

Join the club and get a new T-shirt every month representing a different group of specialized units from the U.S. Military, local and federal law enforcement, and fire departments.

ONLY \$24 A MONTH

[HeroTshirtClub.com](http://HeroTshirtClub.com)



My Intent # **0 3 2**

Make it to the objective

...Knives with intent...

[www.spartanbladesusa.com](http://www.spartanbladesusa.com)

**Free Shipping** on orders over \$199

**Free Collapsible Water Bottle** on orders over \$99

- Long Term Food
- Fire Starters
- Burial Vaults
- Water Storage
- Medical
- Bug Out Bags
- Shelters
- Survival Knives
- Survival Gear

For 5% off use Coupon Code: **offgrid**



**THEY'RE COMING**

[ForgeSurvivalSupply.com](http://ForgeSurvivalSupply.com) / 800 - 380 - 9860



# Hack Cash

## A Look at the Costs Related to Cyber Attacks

Story by Patrick Vuong

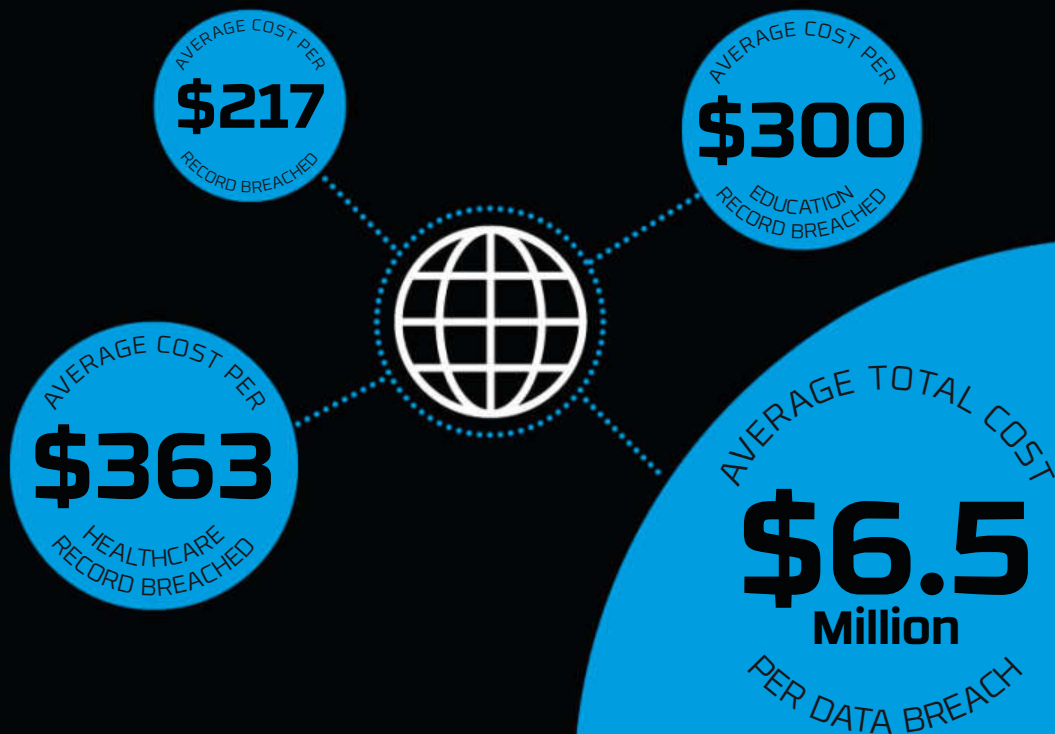
**T**here's almost nothing that can't be done digitally. Looking for a companion? There are dating apps like Tinder. Need to deposit a check? Snap a pic of it and send it to your bank. Looking for a new bug-out bag? Do some online window shopping. The list goes on. And, unfortunately, so too do the ways in which we make ourselves vulnerable on the Web.

With the rise of virtual pickpockets, cyber terrorists, hacktivist groups, and militarized hackers, we as a society are getting more susceptible to online attacks — unless small businesses, large corporations, and government agencies beef up their security protocols. Of course, we each have a responsibility to protect ourselves online (see

"Cyber Crimes" on Page 68 for strategies), but we're focusing here on companies because when they have to shell out more for cyber security, they pass those costs onto the consumers — us. Also, you might not realize it, but businesses house a lot of our personal information. Your physical address could be obtained by hacking a county archive. Your social security number could be stolen from government databases. And your credit card numbers can be swiped from an online store with nothing more than a mouse and keyboard.

So, surf the Web wisely — and don't be afraid to ask if your favorite stores, medical providers, and elected officials are doing enough to ensure that your private data stays private. ■

### The Cost of Data Breaches to U.S. Businesses (2014-2015)



#### SOURCES

IBM > [www.ibm.com/security](http://www.ibm.com/security) | Ponemon Institute > [www.ponemon.org](http://www.ponemon.org)



- Vltor Basic IMOD Stock \$94.95
- BCM® Diamondhead Folding Rear Sight \$119.00
- Aimpoint Micro H-1 \$617.00
- ADM AD-B2 Base \$65.95
- ADM T1 SOCOM Spacer \$19.95
- Centurion Arms C4 Rail 12 Inch \$314.00
- BCM® Diamondhead Folding Front Sight \$99.00
- BCMGUNFIGHTER™ Grip Mod 0 \$29.95
- TangoDown SCAR Panel 6 Inch \$13.70
- TangoDown Short QD Vertical Grip \$89.73
- Thorntail Offset Adaptive Light Mount \$50.00
- BCMGUNFIGHTER™ Compensator Mod 1 \$94.95
- ALC Defense QMS Trigger \$45.00
- Geissele SSA Trigger \$210
- BCM® A2X Flash Suppressor \$34.95
- B5 Systems SOPMOD Bravo Stock \$58.00
- CTT Solutions Mag Cap
- Inforce HSP WML \$119.00
- BCM® KMR-10 KeyMod Rail 10 Inch \$254.95
- Blue Force Gear VCAS Sling \$45.00
- Trijicon TA31RCO-M4 \$1,422.05
- GDI R-COM B-Model Mount \$205.00
- BCM® Low Profile Gas Block \$44.95
- BCMGUNFIGHTER™ Vertical Grip \$49.95
- Midwest Industries SSK-KeyMod 12 Inch Free Float Handguard



- SureFire X300 Ultra LEDWeaponLight
- EOTech XPS2-0 HWS \$499.00
- EOTech G33 STS Magnifier \$549.00
- Midwest Industries Folding Front Sight \$79.95
- Midwest Industries SPLP Rear Sight \$119.95
- BattleComp 1.0 \$149.99
- BCM® KMR-13 KeyMod Rail 13 Inch \$269.95
- IWC KeyMod QD RL Sling Mount \$17.00
- TangoDown ARC MK2 Magazine \$14.95
- ALG Defense ACT Trigger \$65.00
- BCMGUNFIGHTER™ Compensator Mod 0 \$89.95
- BCMGUNFIGHTER™ VPG-KeyMod QD Vertical Grip \$44.95
- TangoDown PR-4 Rear Sling Mount \$73.65
- BCMGUNFIGHTER™ Buttstock
- BCMGUNFIGHTER™ Grip Mod 3 \$17.95
- PWS FSC556 Tactical Compensator \$98.95
- PWS KeyMod Bipod Adapter \$23.95
- Wilson Combat Tactical Trigger Unit \$269.95
- Vltor Carbine EMOD Stock \$119.65
- Geissele Super Modular KeyMod 13 Inch Rail MK4 \$350
- Daniel Defense AR15 Lite 7.0 Rail \$219.00
- Aimpoint PRO Patrol Rifle Optic \$416.00
- TangoDown BattleGrip \$35.75
- BCMGUNFIGHTER™ Grip Mod 2 \$29.95



YOUR  
**ADVENTURE  
AWAITS**  
TOUGH TRUCK TIRES

Photographed under controlled conditions. Do not attempt.



H/T



A/T



A/T3W  
COMING SOON



M/T  
COMING SOON

**WILDPEAK** Tough Truck Tires take you everywhere a new experience awaits, with confidence and comfort.

**FALKEN**  
TIRE  
ON THE PULSE